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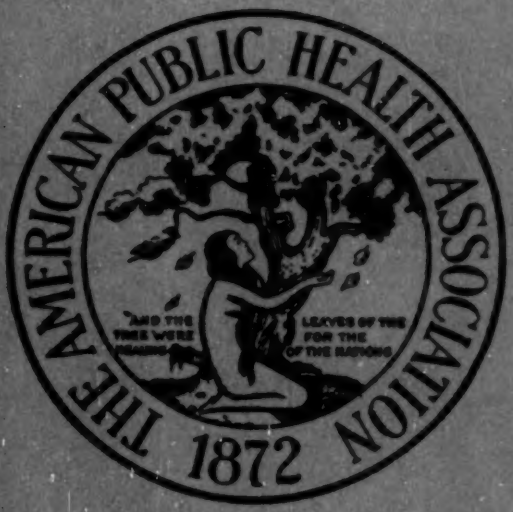

NOVEMBER, 1954

volume 44

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1. Kroop, I. G. and Stackman, N. H.: Proc. Soc. Exper. Biol. & Med. 86:95 (May) 1954.
2. Wood, H. F., and McCarty, M.: J. Clin. Investigation 30:616 (June) 1951.
3. Stollerman, G. H., et al.: Am. J. Med. 15:645 (Nov.) 1953.
4. Hedland, P.: Acta med. Scandinav., Supplement 196:579. 1947.

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Official Monthly Publication of the American Public Health Association, Inc.

Volume 44 | November, 1954 | Number 11

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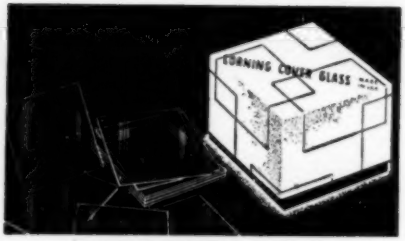

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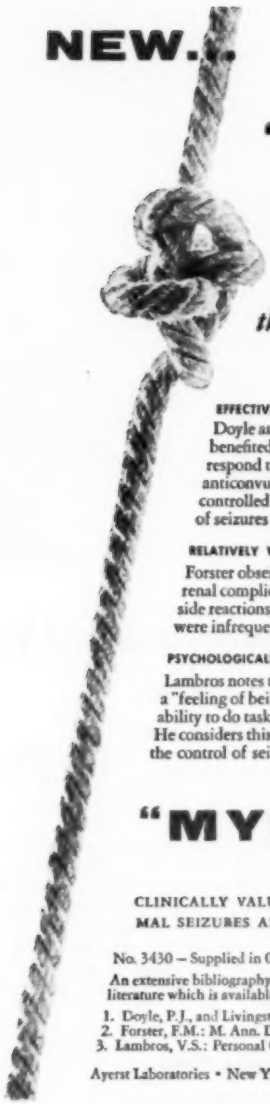

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1. Doyle, P.J., and Livingston, S.: J. Pediat. 43:413 (Oct.) 1953.
2. Forster, F.M.: M. Ann. District of Columbia 23:137 (Mar.) 1954.
3. Lambros, V.S.: Personal Communication.

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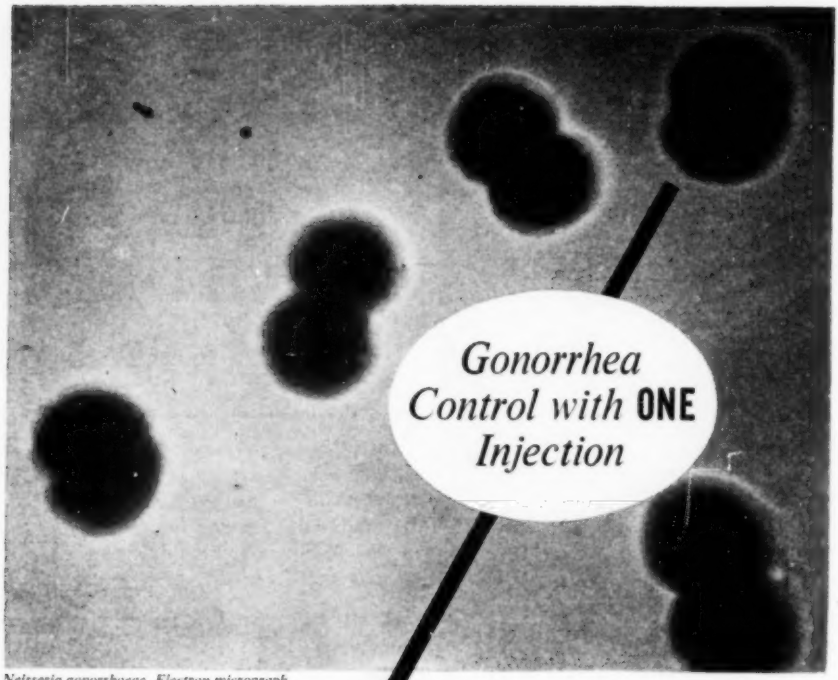

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1. Shillinglaw, C. A., and Levine, M., Food Res. 8:464, 1943.

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References
(1) Kirby, W. M. M.; Waddington, W. S., & Doornink, G. M.: Antibiotics Annual, 1953-1954, New York, Medical Encyclopedia, Inc., 1953, p. 285. (2) Finland, M., & Haight, T. H.: *Arch. Int. Med.* **91**: 143, 1953.

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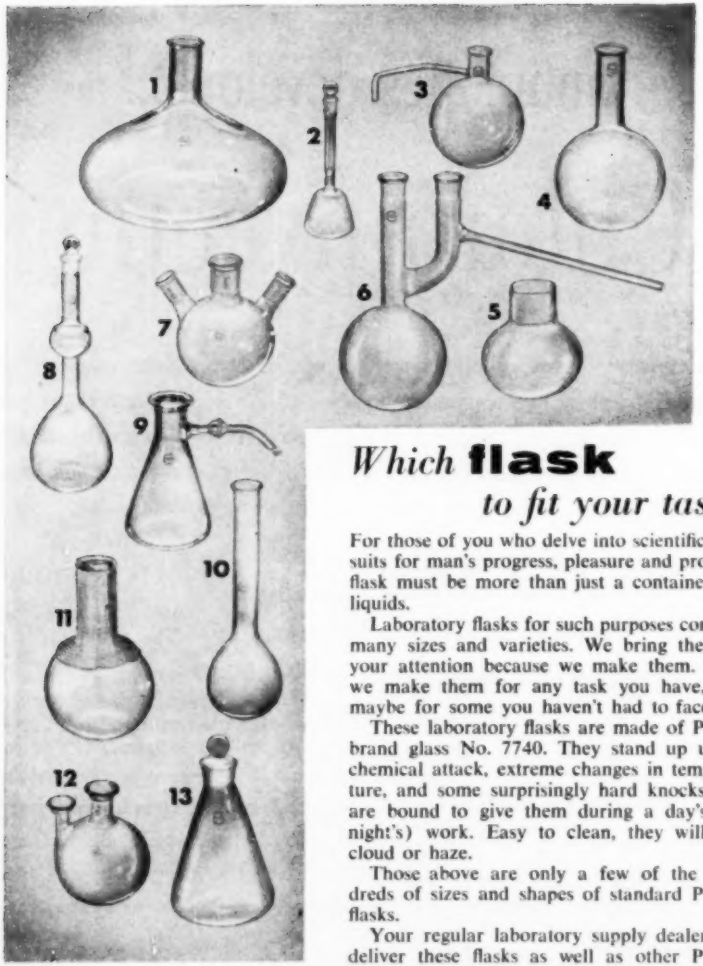

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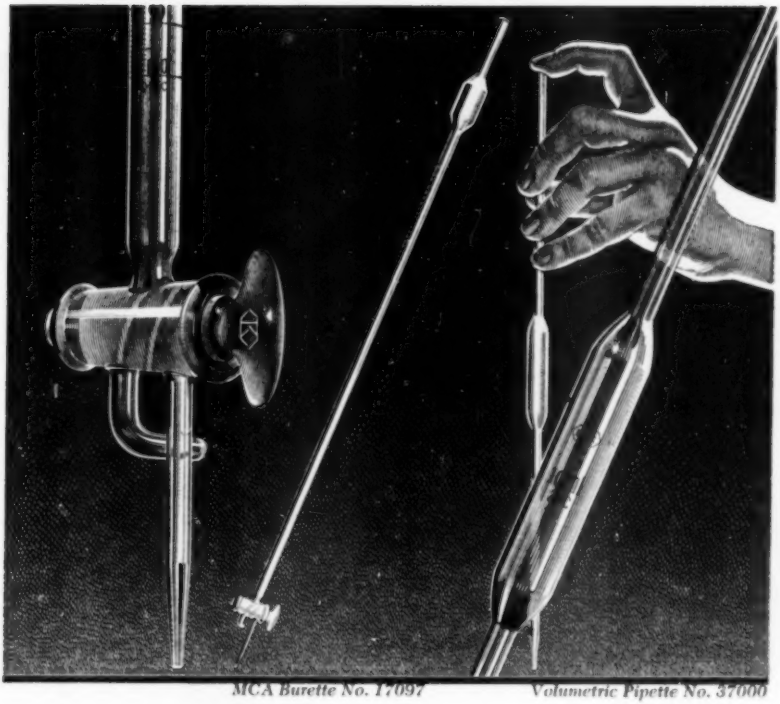

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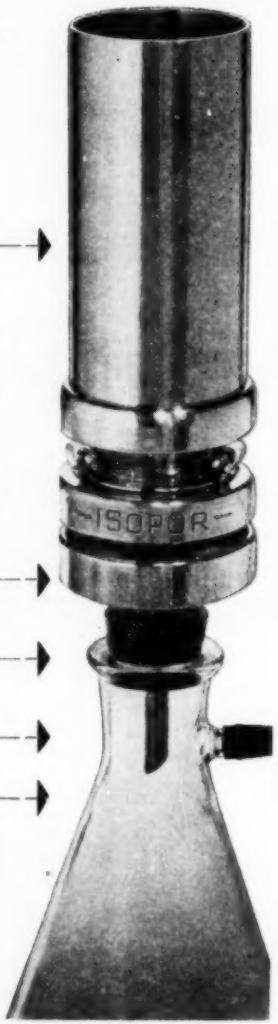

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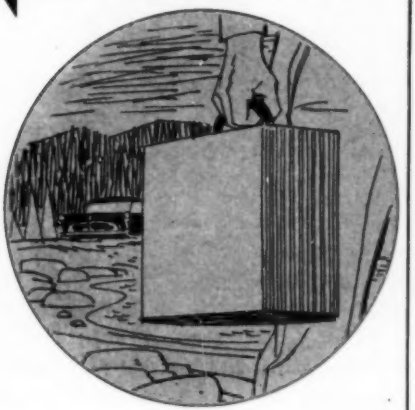

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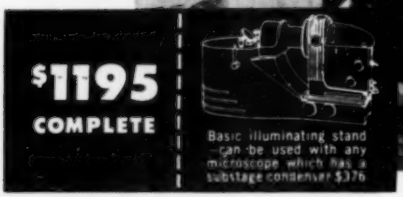

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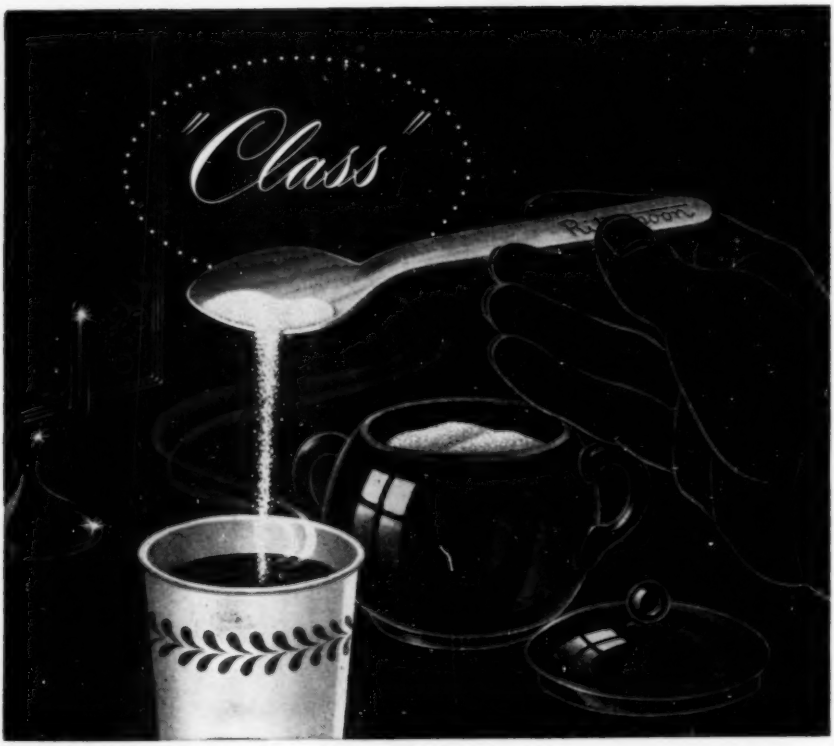

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1. Herrington, B. L.: Milk and Milk Processing, New York, McGraw-Hill, 1948, c. 2.
2. Gunther, M.: Brit. J. Nutrition *6* (No. 2): 215, 1952.

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(1) Hopkins, J. G.: AMA Arch. Dermat. & Syph., 67:479-483 (1953).
(2) Sullivan, M., and Bereston, E. S.: J. Invest. Dermat., 19:175-178 (1952).

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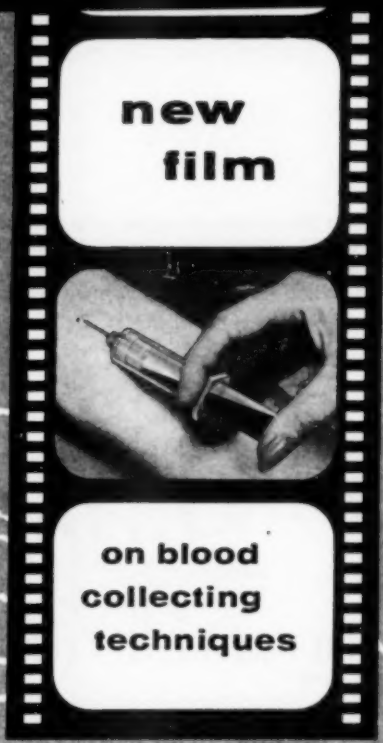

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1 *Klarmann, E. G.; Wright, E. S. and Shternov, V. A.: Prolongation of the antibacterial potential of disinfected surfaces, Applied Microbiology 1:19 (Jan.) 1953.*

2 *Smith, C. R.: Disinfectants for tuberculosis hygiene, Soap and Sanitary Chemicals 27:130 (Sept.) 1951; 27:145 (Oct.) 1951.*

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By H. C. Schaefer, Director, Laboratory Chow Research

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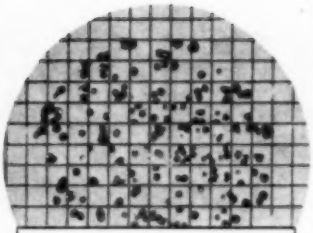
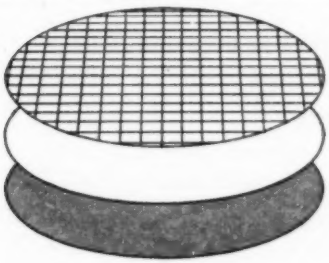


MF membrane with colonies of E. coli after 18 hours of incubation using ISOPOR dehydrated nutrient schedule.



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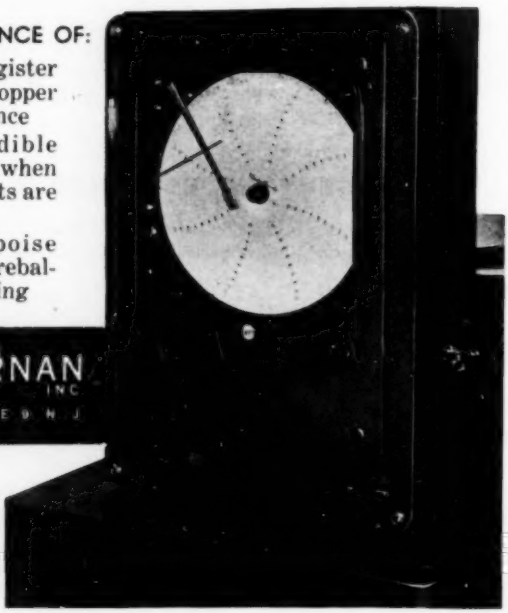

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American Journal of

PUBLIC HEALTH

and the Nation's Health

Official Monthly Publication of the American Public Health Association, Inc.

Volume 44 November, 1954 Number 11

Teamwork in the Service of Health

HUGH R. LEAVELL, M.D., Dr.P.H., F.A.P.H.A.

Here is a classic summary of what we mean by public health "teamwork," and a very pertinent application to our own Association.

All of us have experience in teamwork and we know how important it is in getting a job done. As an introduction to our discussion, may we consider first some of the things we in public health have in common which provide the oneness of objective so essential to good teamwork.

All of us are involved in some type of organized community activity. This is the essential element that differentiates public health from other forms of preventive medicine, according to Professor Winslow's world-famous definition, which I recently found to be just about as well known in Latin America and in Asia as in North America. May I remind you of Professor Winslow's farsighted Presidential Address entitled "Public Health at the Crossroads" made before this association here in Buffalo in 1926. He showed then the characteristic leadership which has inspired generations of his students. The example of teamwork which he and Mrs. Winslow have set is one we all might hope to follow.

We all realize that an organized approach is needed to deal effectively with the complex problems and the diverse population groups we meet in our daily work. We are concerned with the total community rather than placing our emphasis on the individual, as the private practitioner does.

We tend to stress the preventive rather than the curative aspects of total health service. At the same time we recognize that it is impossible to draw a sharp line dividing prevention from cure. Curing one phase of a disease may so interrupt its natural history that complications and aftereffects are prevented.

Though we come from many basic professions, we tend to think of ourselves as members of the public health profession—a sort of "E pluribus unum"! As professional people, and because of our training and experience, we feel that we have the right and the responsibility to speak with some degree of authority about health matters. Though some of us work in voluntary

Dr. Leavell is professor of public health practice, Harvard School of Public Health, Boston, Mass.

Presidential address to the American Public Health Association at the First General Session of the Eighty-second Annual Meeting in Buffalo, N. Y., October 12, 1954.

agencies and some for government, we do not divide ourselves into two groups on this basis, even though our problems may differ somewhat.

We recognize the importance of the "public" part of public health, and know from our own experience that our "health" technics can be used with maximum effect only if the public understands our objectives and is sympathetic with them.

One could mention many additional similarities which draw us together and provide the basis for teamwork.

Psychological Basis of Teamwork

The word "team" in its Middle English origin referred to "offspring, progeny, and family," as well as to "a line of animals harnessed together." Significant for our discussion are additional meanings of the word "team": "a number of persons associated together in any work," and "a group of persons pulling together," also "a group of workmen each completing one of a set of operations." These meanings are in addition to those relating to the athletic team. The word "team" clearly carries the strong implication of a job to be done cooperatively.

Literature on the psychology of teamwork as such is not abundant. There is, however, a rapidly growing volume of data on the dynamics of the human group, especially the small group, and on the subject of leadership. Much of this is pertinent to understanding the team. This is not the time to review the literature, though it is important to summarize points relevant to our discussion, especially those related to leadership.

None of us will question the importance of leadership in teamwork. Leaders have existed since the beginnings of human history. There were doubtless animal leaders before that, with their "pecking orders" just as they exist among chickens (and among ourselves) today.

Chester Barnard,[1] an outstanding business leader himself, has done much to clarify our ideas on the subject of leadership. He has a most useful list of leadership qualities, including vitality and endurance, decisiveness, persuasiveness, responsibility, and intellectual capacity, which he considers subsidiary in importance to the other qualities. His definition of responsibility reminds me of the aseptic conscience one develops when working in an operating room or with microorganisms. Responsibility, he says, is "an emotional condition that gives an individual a sense of acute dissatisfaction because of failure to do what he feels he is morally bound to do, or because of doing what he thinks he is morally bound not to do, in particular concrete situations." My New England friends would relate this pretty closely with Conscience, I believe.

Barnard recognizes four major sectors of leadership behavior which I should like to discuss briefly:

1. The determination of objectives
2. The manipulation of the technical means for attaining the objectives
3. Control of the organization
4. Stimulation of coordinated action

Determination of team objectives is vitally important. Pearson [2] notes that "The team must believe that the kind of game for which it is organized is worth playing." Team members cooperate with the leader when they believe it to be in their own best interest to do so. Whether their interest is altruistic or selfish, the result from the standpoint of cooperation is the same. There will be effective teamwork only when the leader can make his objectives and those of the followers essentially the same. Therefore, the "leader will listen" as Homans [3] has said, to learn what the followers think, and to profit by their ideas.

Out of all the suggestions and ideas

that may arise, choices must be made. To make such choices the good leader must have, "an understanding that leads to distinguishing between the important and the unimportant in the particular concrete situation, between what can be done and what cannot be done, between what will probably succeed and what will probably not, between what will weaken cooperation and what will increase it." [1] The leader is something more than a chairman of the group comprising the team; he cannot always take a vote and let the majority rule. When all the followers have had their say and made the issues clear, the leader must decide. This attribute of decisiveness is one essential quality of leadership which seems to be universally agreed upon. Barnard calls it, "The element of critical importance in all leadership." Some ways of being decisive favor cooperation and others have the reverse effect. Then, too, there are situations when decisiveness on the leader's part is absolutely essential and others in which it is not crucial. If the leader has convinced his team that his basic objectives and theirs are similar, his decision will "stick."

This raises the basic question of authority. Authority is not an oily substance with which some high priest may anoint the heads of leaders. Authority is rather an attribute with which the followers cloak their leader. The size of the cloak the followers are willing to give him depends on the oneness of objectives and the confidence the followers have in their leader's ability to be useful to the team in accomplishing those objectives. We are accustomed to thinking of the trappings of leadership, the badges of "authority" which designate those whose instructions we are supposed to follow. Among such badges of authority are the policeman's uniform, the insignia or "brass" worn by military officers, the panelled office of the "boss," the designated chairman of a committee with which we are working, or the legally constituted health officer. When badges such as these are normal parts of our culture we tend to accept them up to a point. However, in the final analysis, as Homans has said, "The authority of an order always rests on the willingness of the persons to whom it is addressed to obey it." Ordway Tead [4] says, "Every good leader is at heart summoning loyalty for a purpose which commends itself deeply and truly to the led and to the best they know and feel."

Barnard's [1] second sector of leadership behavior is that in which the leader manipulates the technical means of accomplishing the team's objectives. Technical processes loom large in our health work. We tend, perhaps, to equate technical competence with leadership more than is done in some other types of teamwork. The leader naturally must have an adequate understanding of the technical processes his team performs, but he need not be the most proficient technician on the team.

Because the physician has technical competence and is legally empowered to prescribe therapy for the sick; because he has taken a course of training which is probably longer, more arduous, and more expensive than that taken by other members of the public health team; and because of the high status which the physician holds in society—all these and other reasons have made it customary for the physician to be designated as leader of the health team.

Leadership based on technical competence alone does not go unquestioned. Public administration experts stress the value of filling many top posts with "generalists" in administration, rather than with technical people. Barnard [1] says, "At present we overestimate the importance of technical skill and competence and undervalue, or even exclude, the less tangible and less obvious factors in leadership." Specialized training,

such as the physician receives to an ever-increasing degree, restricts the time young men have for training in leadership—"they are necessarily diverted to a considerable extent from experience with men, organizations, and social situations, the distinctive fields of application of leadership ability."

It is certainly not my desire to make a case against the physician as leader of the health team. I am proud to be a physician and to come from a family of physicians. I believe that in the future it will be even more logical than in the past for the physician to serve as team leader, for health work will doubtless concentrate more and more on the individual in his environment, rather than on the environment itself, at least in the more industrially developed countries. My point is simply this—because of being a physician, a man is not necessarily a proper leader. He must have qualities of leadership, and he must cultivate those qualities assiduously if he is truly to deserve to be the leader, and if his leadership is to be effective.

Organization, Barnard's third sector of leadership behavior, is obviously basic to organized community action for health. In discussing the thinking about organization and administration in recent years, Sayre [5] points to the loss of "certainty" that arose between 1940 and 1950. In prewar days the foundations of administration were considered firmly based in "scientific management." "Confident and experienced men wrote eloquently and with contagious conviction of a public administration which was nearing the nature of science."

Today it is more apparent that administration is a social process, deeply involved in the problems of human relations. Today, more than formerly, we think of the organization chart in terms of the team of people it represents. We have learned so much of the great importance of informal organization, that the formal type has lost some of its charm. Far be it from me as a teacher of public health administration to belittle organization charts, concepts of span of control, staff and line activities, and the like. Such concepts are valuable; they clarify our thinking; and they are useful in devising organizational set-ups which make it easier for the team to function. But we cannot depend on these more or less mechanical contrivances to get the job done. The members of the team do the work; they are people, with the strengths and weaknesses inherent in people.

This brings us to Barnard's fourth sector of leadership behavior, which is the stimulation of coordinated action. "Coordinate" has become something of a fighting word. If we do the coordinating, it is a fine thing; but we rebel at the idea of being coordinated by someone else. My dictionary tells me the prefix "co" is derived from the Latin "cum" meaning "with, together, in conjunction, jointly." I am left in some confusion when dictionaries differ as to the meaning of "ordinate." One tells me it means "arrange," but another better explains our reactions to coordination by saying it means "regulate." And we all dislike being regulated!

However, we recognize that the leader has a job of coordination to do, especially with teams as diverse as ours in public health. There are many ways of doing this effectively, including orientation of new staff members, inservice training, refresher courses, staff meetings, maintaining proper channels of communication—in two directions, of course—and so on. Coordination seems a less unpleasant process when we recall that it gives us the opportunity to make our contribution to the team's total product. This is obviously so much bigger and more important than anything we could do alone that we can find joy in being part of a great enterprise. Tead [4] says, "Leaders are those who in-

fluence others to a joint exercise of power" which is a nice idea to remember, I believe.

Members of the Health Team

The health team includes an astounding array of workers running from the highly skilled neurosurgeon on one end of the broad spectrum of training to the unskilled laborer on the other. Medicine recognizes some 20 major specialties; dentistry has not a few; nursing has its collegiate graduates, hospital school graduates, practical nurses, nurses aides, etc. There are public health engineers, sanitary engineers, sanitarians and sanitary inspectors, myriads of technicians and laboratory workers. We have our epidemiologists, biostatisticians, nonmedical administrators, health educators, nutritionists, social workers, specialists in community organization or hospital administration, rehabilitation workers, veterinarians, and many others.

Shepard [6] has pointed out that "unlike most other professions . . . public health recruits its workers from (these) several other professional fields. . . . It is astonishing how this cause has gradually amalgamated such varied professional interests into what is now a profession" —the profession of public health itself. It is natural that with such diverse professional backgrounds there should be some division of loyalties among the members of the public health team. Does primary loyalty belong to the profession from which we came or to public health itself? Ordinarily, there should be no need for a conflict of interests. Should the need for decision between the two interests arise, it is important to resolve the conflict. If the public health worker's chief loyalty is not to the team on which he works, he may be on the wrong team.

Division of health workers according to whether they are engaged in "curative" or "preventive" work is not infrequently attempted. Such a sharp division overlooks the biological nature of disease. Administrative dividing lines may be set up on such a basis arbitrarily, as distinguished from biologic ones which are by no means distinct. The natural history of disease is a dynamic process which goes through successive phases of interaction of host, agent, and environment, ending in cure, disability, or death, as the case may be. As we learn more we can influence this biologic process favorably for man at various stages in the unfolding natural history. Barriers may be erected which retard or stop the process. Such barriers may be divided from the beginning of the natural history to its end into broad bands which may be called "levels of prevention." They may be designated, promotion of health, specific protection, early diagnosis and prompt treatment, limitation of disability, and rehabilitation. These broad bands represent stages in the developing natural history at which man may make his attacks. A given society might choose to assign to governmental health departments concentration of work at the levels of promotion of health and of specific protection. Private practitioners might work principally at the levels of early diagnosis and prompt treatment and of disability limitation. Rehabilitation might be relatively neglected. This is approximately the pattern which the United States has followed, with some major exceptions.

It is well to clarify the meaning of the word "prevention" when used in speaking of "levels of prevention." Dr. Mather [7] of British Columbia has pointed out that in this context the word is used with the meaning it had in Elizabethan times when "prevent" meant to come before or precede. Two examples from the King James Version of the Bible illustrate this use:

Psalm 88:13—"But into thee have I cried, O Lord; and in the morning shall my prayer

prevent thee." The revised version reads, "But I, O Lord, cry to thee; in the morning my prayer comes before thee."

Psalm 119:147—"I prevented the dawning of the morning, and cried." The revised version reads, "I rise before dawn and cry for help."

Obviously, if we use the word "prevention" only in terms of keeping some possible event from happening, our use of the word is a different one. In this sense, no one is going to try to "prevent" either the Lord or the dawning of the morning. If the meaning is that of anticipatory action, however, anyone practices preventive medicine when he provides the best care available with modern methods, doing all in his power to prevent the progress of the natural history of disease.

When all the various team members recognize their common objective of throwing up these barriers at whatever point "on the production line" they happen to stand as the natural history passes through "their" territory, they can be a real team with a common goal of building a healthier community. Then, when jurisdictional disputes arise at the dim boundaries set for administrative convenience, they will be recognized as such. When they are recognized as administrative problems only it will become relatively simple to solve them as such. When the time comes that a single individual or group has responsibility for comprehensive and continuous care for a patient throughout the natural history of health or of whatever disease may befall him, these jurisdictional disputes will largely vanish.

It is wasteful to have highly trained workers doing jobs that less well trained people could do as well or perhaps better. We might profitably follow the splendid example the nurses have set in making job analyses to show the types of work which safely may be assigned to workers at various levels of training. Thus a balanced team can be organized, with each member doing that for which he or she is best qualified.

The usual members of the health team unaided can scarcely deal adequately with such broad fields as mental health. Psychiatrists, psychologists, and psychiatric social workers are too few to handle the field alone, and their training too costly to make it economical for them to do the whole job. Even when the specialized mental health workers have help, as they should, from other members of the health team, such as practicing physicians and public health nurses, they simply do not have contact with a sufficient number of people in a sufficient proportion of the mental and emotional crises of their lives to meet the needs. Parents, clergymen, school teachers, recreational leaders, and others must understand the mental health problem so they can do their parts, and we must help inspire them to do so.

I shall simply mention the vast problem of recruitment, so admirably discussed at the 1954 Forum of the National Health Council.[8] It is very heartening to know that a great insurance company is providing funds to the council to assist in recruiting new members for the health team.

Citizen Members of the Team

At the beginning of our school year at Harvard I usually walk silently into the classroom and write on the blackboard the question, "What do the people want done about their health?" The people must be part of our health team if our work is to be effective. We must use modern technics of attitude sampling to learn more about their attitudes and we must include representative citizens in the planning stage of the work.

Learning people's attitudes about health, having the value of their advice in planning, and giving them the opportunity to participate in working out their own health programs—this is helping

people to help themselves, which has become such an important watchword in international health work. This is part of community organization and each of us in public health can understand its principles sufficiently well to make our work more productive. We should not leave this as the sole province of the community organization specialist.

Evidence on all sides shows that the enduring health programs are those the people have understood and those they have had a hand in developing. Hydrick,[9] who worked in Indonesia and later in Peru, put great emphasis on attempting "to awaken in the people a permanent interest in hygiene." He said very frankly, "There would be no objection whatever to the use of coercion if its use could secure permanent results. But it has been tried so often without success." The principles Hydrick worked out in Indonesia when it was still under the Dutch are being used today in the health program there. But now that the people have their freedom, they are less suspicious of their health workers, and much more cooperative than was the case when the Dutch were in control.

Allport[10] has summarized very neatly the universal psychological need for participation. He says: ". . . people must have a hand in saving themselves; they cannot and will not be saved from the outside . . . people have to be active in order to learn, in order to store up efficient memories, to build voluntary control, to be cured when they are ill, restored when they are faint. . . ."

At a recent meeting of the National Advisory Committee on Local Health Units[11] the following important statement was made:

"A community must be helped to find and satisfy its own needs rather than urged to accept a standard service prescribed by professionals."

No "citizen" members of the health team are more essential to success than our wives (or husbands). In public health work we are fortunate to be able to discuss our problems more freely with our families than can those who are bound by the confidential nature of the private physician-patient relationship. Our husbands or wives can thus be real partners in our jobs and help us find the strength so sorely needed.

International Health

The international field provides opportunities for teamwork of the highest order and imposes considerable strains even on those with the best of good will. There are so many differences to be overcome—differences in language, in semantics even in the same language, in cultures and in value systems, in literacy levels, in transportation, and means of communication.

When a health worker from our country returns home after a successful foreign assignment he will be a more useful person than before in his own environment. He will see differences at home to which he was blind before, and his tolerance for differences will be increased. Our professional organizations have here an opportunity for teamwork which we must not miss. We can broaden the view of our appointing authorities, helping them realize that foreign experience is useful training for work on the domestic scene. This will encourage better people to undertake foreign service, as they will not fear losing out in their professional careers. And the better the people we can send abroad, the better our foreign relations will be.

Preparation for Teamwork

It takes work to build teamwork and experience in working together. Unfortunately, many of our professional schools tend to live somewhat in isolation, providing students with few opportunities for working with other members

of the health team. Our schools of public health, with representatives of several of the different professions among the student body, have excellent opportunities for breaking out of this isolation. Even though the students' academic backgrounds differ, and though there are teaching problems in putting the different disciplines together in classes, it is most important to provide experience in teamwork during academic training. This will also show the student clearly that his teacher places great value on the importance of the team in the public health work for which the student is being trained. From my own experience as a health officer, I am sure that graduates of schools that emphasize teamwork make better staff members than do the graduates of places that lack this experience.

In preparing for teamwork it is also valuable for us to recall the two parents in our family tree. Our "health" parentage comes from the natural sciences. Our "public" parentage is in the behavioral sciences of sociology, anthropology, psychology, and political science. We need to look up our ancestors more in the future. Our genealogy is an honorable one, and we can advantageously study it.

Value of the APHA Team

The APHA is a very remarkable organization. Our 13,000 members make us the largest public health association in the world, though a number of professional societies are larger. We are reasonably mature in terms of age, but not yet in need of gerontological care. Our annual budget of more than half a million dollars is a lot of money and hard to get, but our wealth alone is insufficient to give great prestige.

After working for a good many years with members, officers, and the staff of the APHA I feel strongly that it is the finest organization of its kind that I know. The loyalty shown it is tremendous. When any of us are given responsibilities for the APHA we do not take them lightly. Pettiness and self-interest seem to vanish and the good of the whole becomes the primary consideration. We have our blocs and special interests, as is true of any considerable collection of people, but when the chips are down we remember our broad responsibilities to the great groups of people to whose service we are dedicated.

If not to the APHA, where can the people of this country look for public health leadership? Our membership includes those who have legal responsibility for the health of our communities; those concerned with planning for best use of the community's total health resources; those responsible for the destinies of the powerful national voluntary health agencies, as well as the great many field workers who go directly into the nation's homes and see the people faced with their health problems and their social problems. I believe we have the responsibility for national leadership. When all of you as members of this great Association recently expressed yourselves about our purposes as an organization, you confirmed this belief.

How can we exert this leadership most effectively? First, we must study our national health problems, and we have the epidemiological method as the tool designed for just this purpose. We have our standing committees, and our Sections, our Affiliated Societies and our Branches to make such studies. We have our democratically elected Governing Council by which we may fix our basic policies after debating the issues. We have membership in the National Health Council with its declared purpose of bringing together representatives of those national health agencies that are interested in working together for the nation's health.

All the necessary mechanisms for

study and for joint planning are in existence. The principal additional factor needed to make our leadership effective is the strong will to do so. There is some question in my mind as to how strong this will has been in recent years. We seem to have been wavering, to have been fearful and uncertain. Perhaps we have feared making enemies among powerful groups with whom it is highly important for us to have harmonious relationships and whom we should like to count among our friends and supporters. In the heritage of our past there have doubtless been periods of similar uncertainty, but such periods are not the basis of the greatness of the APHA. We may be forgiven for faltering occasionally. We cannot be forgiven if we do not soon recognize our weaknesses and return to seek the source of our true strength. Unquestionably this strength comes from a dedication to the best interests of all the people. Our strength does not come from blindly following segments of the people, whether or not such segments are professional. We are in strategic positions from which we should be able to see the needs, resources, and attitudes of the people at least as clearly as any other group, and more clearly than most. To fulfill our manifest destiny we must do this, and we must make our voice heard in the councils of the Nation. Only in this way can we maintain our faith in ourselves and in our Association.

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Mental Health Training Grants

The Public Health Service announces that December 15, 1954, is the closing date for filing applications for training grants under the National Mental Health Act for the academic year 1955–1956. Applications are also being accepted for the support of projects directed toward the development and evaluation of current and new teaching and training methods in psychiatry, clinical psychology, psychiatric social work, and psychiatric nursing. Application forms and additional information from Training and Standards Branch, National Institute of Mental Health, Bethesda 14, Md.

Zoonoses in Australia

A Conspectus of Some Clinical and Preventive Aspects

A. R. SOUTHWOOD, M.D.

From the other end of the world comes this mirror picture—with seasons and compass reversed—in which we may see ourselves groping our ways through the obscurities remaining in several of the diseases we share with animals.

General Considerations

✞ It is reasonable to suppose that when man began to give attention to disease he thought first of his own afflictions. The causes, nature, and effects of diseases of human beings were one of his early cares. He became a student of the ills of his own flesh—a physician. Soon, however, he came to consider illness of the animals who supported his life and who lived closely with him. He became a veterinarian.

Karl Meyer has said that animals have "shaped the destinies of man. His existence and progress have depended to a considerable degree on the animals he hunted and later on those he domesticated." He came "to realize that epizootics continuously threaten and occasionally exterminate his herds, and later that these epizootics also threaten his own health, even his life. . . . He was very slow to recognize the responsibility of wild animals for his illness. The rat, bearer of the Black Death and other scourges, entered his dwelling as early as 1000 A.D., but its role was not discovered for eight centuries." In the time of the Great Plague of London, 400 years ago, dogs were suspected as vectors and hundreds of them were destroyed—to no direct advantage as an antiplague measure, but not wholly useless for London's health. Even today the visitor to London is surprised at the easygoing attitude toward dogs and the frequent disregard of the tenets of public hygiene.

We share scores of diseases with animals. The Joint WHO/FAO Expert Group on Zoonoses has published a list of 98 "diseases naturally transmitted between vertebrate animals and man." Fortunately, many of the diseases are rare in man, but some are serious and not so rare. The term "zoonoses" was applied originally by Virchow to the diseases of animals that secondarily transmit their contagion to man. Karl Meyer prefers the term "anthropozoonoses," indicating animal diseases transmissible to man and vice versa—human diseases spread by animals, in effect.

Ecology is a matter of supreme importance when we consider zoonoses, as indeed it is in relation to all infections. Where we used to speak of environment, of conditions favorable (or unfavorable) to the spread of disease, of host-parasite relationship, we now talk of the "ecological relationship of man and the invading organism." That very wide and useful study constitutes the very basis of epidemiology.

Australia is by current standards a land of good health. The climate is mainly warm and dry, food is adequate in quality and quantity, the people have a fair appreciation of the laws of hygiene. Apart from sharing in the 1918–1919 influenza pandemic and the recent poliomyelitis visitation, we have had no

major widespread outbreaks of illness. Of the zoonoses, we have had very little anthrax, bovine tuberculosis, typhus (and that the mild endemic form), encephalitis, leptospirosis, and brucellosis. We have escaped rabies, bilharziasis, tularemia, trypanosomiasis, leishmaniasis, and yellow fever. Except for hydatidosis, we have suffered little from helminth diseases. Cases of contagious ecthyma (orf) and cat-scratch disease are occasionally noted.

I shall make brief comments on some zoonoses we have been recently interested in and shall give more detailed attention to that old but still existing trouble of ours—hydatidosis.

Early last year at the Australasian Science Congress, a session was devoted to considering zoonoses in Australia, offering useful general surveys of the human and veterinary aspects, respectively. Several scientists working in Australia reviewed the features of individual infections, and this paper is based mainly on their work. My personal contribution has been slight, though as a physician I had the opportunity to observe the results of infection in man by some of the zoonoses. Many of the recent investigations have been made under the aegis of the National Health and Medical Research Council (Australia), and as a member of the council I have maintained close observation of the progress being made and of the developments generally. In this review I have also made use of the valuable WHO reports, especially WHO Technical Report No. 40 (1951) and WHO Monograph No. 19 (1953).

Hydatid Disease

Pioneer work on hydatid disease in man was done by many Australian doctors in the latter half of the last century, contributing greatly to the biological and clinical aspects. More recently, Cleland and Dew have added valuable knowledge. Dew, my colleague on the National Health and Medical Research Council, wrote a comprehensive work on the subject which remains a standard authority.

Alternative names are echinococcal disease, echinococcosis, or hydatidosis. Forty years ago the medical textbooks taught that Australia and Iceland were areas badly affected by hydatid disease. Other countries were thought almost free of it. Now, according to the Joint WHO/FAO Expert Group on Zoonoses, hydatid disease is a world problem, recognized in varying degrees in every continent. The areas of greatest known incidence are southern South America and parts of Oceania, but the Mediterranean littoral, Central Europe, the Middle East, and parts of northern South America are also troubled. The disease is spreading from the old major foci of infection. New foci have been found in regions previously thought unaffected.

From the standpoint of ecology, the hydatid parasite is most interesting. It has a double life—the worm stage and the cyst stage. It flourishes best in areas where sheep and dogs abound. In the adult worm stage it lives in the intestine of dogs; the larval cyst stage is to be found in sheep and in man. Mature eggs, passed in dog feces, are ingested by sheep. Experimental studies have shown that the hexacanth embryos appear in the portal vein in a few hours and in the liver lobules within 12 hours.

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This paper was presented before the Epidemiology Section of the American Public Health Association at the Eighty-second Annual Meeting in Buffalo, N. Y., October 12, 1954.

In his presentation Dr. Southwood made reference to the work in this field by Sir Frank MacFarlane Burnet, director of the Hade Institute, Melbourne, and Dr. I. M. Mackerras, director of the Queensland Institute of Medical Research.

By the third week the tiny cysts, the hydatid follicles, measure 0.3 mm. and are just visible to the naked eye. The cyst's laminated external membrane develops and a striking eosinophile accumulation and cellular reaction occurs in the peripheral zone. Generally the cyst grows in spherical form, pushing aside and crushing the liver cells. Cysts are commonly multiple. There is evidence that sometimes the host's cellular reaction overcomes the parasite in an early stage, producing fibrosis and an aborted follicle.

It has been shown that it takes seven or eight weeks from the time the dog eats sheep's liver with hydatid cysts for the worm to develop and to produce ova in the dog's feces. Mature eggs, passed in the dog's feces, are ingested by sheep or man. The eggs hatch in the intestine; the hexacanth embryos, which bore into the tissues, reach the circulation and are carried to the liver. There the onchosphere developes as a cyst with daughter cysts filled with scolices. Ingested by the dog, each scolex may become a tiny tapeworm—Echinococcus granulosus.

The eggs passed from the dog may live three weeks at Australian summer temperatures if kept moist; dry hot conditions are less favorable to them. Hydatid disease is probably most prevalent in areas of moderately high rainfall and moderate temperatures. Dogs in sheep-raising districts are especially affected. On farms and stations where sheep are killed for meat and at country slaughterhouses dogs are commonly allowed to eat offal. Up to 40 per cent of farm and station dogs are found hydatid infested. Drovers' dogs, less commonly fed on offal, are much less worm infested; dogs used entirely for rabbit-catching were not found infested —probably because those dogs live on rabbit carcasses. In the cities where there is centralized slaughtering at abattoirs under proper conditions dogs are little affected. Random samples have shown less than 4 per cent with hydatid worms.

In cattle-raising districts hydatid disease in man is rare. There is practically none in the Northern Territory and in western Australia. Queensland, in its northern and inland parts, is little affected; only the coastal areas are much involved. Climatic influences may play a part, for in the cattle the incidence of hydatid disease may be heavy—up to 36 per cent in a survey of 5,000 beasts. It is likely also that casual slaughtering of big cattle is infrequent.

The hydatid tapeworm rarely causes serious illness in dogs. Moreover, sheep and other animals with hydatid cysts often stay in good condition and appear quite healthy. At slaughter the carcasses may be suitable for food, but the waste of edible offals from cyst-infestation may be a great economic loss.

With the ecology of the hydatid so clearly understood, it might be thought an easy matter to eradicate the disease. Treatment of dogs and the avoidance of feeding raw offal to them would be quickly effective, but many butchers still fail to recognize the dangers. Not long ago an inspector on my staff noticing in a butcher's shop some offal with hydatid cysts pointed it out to the butcher. Came the reply: "Oh, that's all right, we only sell that for dogs' meat."

The WHO/FAO report says that Iceland once had "what was probably the world's highest incidence of hydatidosis, yet the disease has now been reduced there to one of very minor importance." This improvement is the result of a campaign of public education, better control of slaughtering, veterinary inspection of all meat, laws restricting the number of dogs, and the anthelmintic treatment of all dogs once a year.

Such a program we in Australia have tried to follow. The effective policing of laws, especially in the sparsely populated outback, is not easy. Probably the

wider use of educational methods will be more effective than laws. The hydatid educational film, kindly lent by the International Wool Bureau, is shown in a mobile caravan theater to groups of sheep farmers and the results are encouraging. We must pursue this health education much more vigorously, for only by the full cooperation of farmers and butchers will we eradicate hydatidosis from Australia.

As a cause of death in Australia, hydatid disease plays only a small part—about 50 deaths per annum for Australia with a population of about nine million. The amount of illness it causes is hard to estimate, but for a disease so easily controlled any is too much.

Arecoline hydrobromide, properly used, clears dogs of hydatid worm infestation. There is no drug treatment of any use against the cyst stage. When the illness occurs in human beings surgical measures must be considered.

Q Fever

This rickettsial infection is not common in southern Australia; occasional cases occur there, generally among butchers and others handling cattle brought from Queensland. Q fever has been observed in many parts of the world—England, the United States, France, Germany, Turkey, Panama, and Australia (where it was first described by Derrick).

In 1935 a febrile influenza-like illness presenting some unusual features appeared among workers at abattoirs and cold stores in Queensland. It was an illness of sudden onset, with chilly feelings, headache, prostration, severe sweats, and generally some consolidation of lung tissue (like that found in virus pneumonia). X-ray examination of the chest often showed patchy shadows or sometimes a fairly homogeneous ground-glass appearance. Derrick studied the cases and recognized the general nature of the disease. The causative organism was found to be a Rickettsia and it was named Rickettsia burneti, now referred to as Coxiella burneti.

In North America soon afterward, a similar rickettsial organism was recovered from naturally infected ticks of the species Dermacentor andersoni. According to Derrick, at least 17 species of ticks have been found to be naturally infected. There has been a variety of animal hosts, from dormouse to dromedary. Since the organism can be transmitted through the egg stage to ticks of the next generation, the ticks themselves could be perpetual sources of infection.

C. burneti has been found under natural conditions in cows, sheep, goats, bandicoots, and pigeons—cows, sheep, and goats providing the main sources of human infection. The organisms are found in high concentration in the placenta and postpartum discharges of infected animals; in less concentration they occur in mammary glands and milk, and on occasions in urine, feces, and sputum. On rare occasions, patients with Q fever may infect other people, infected sputum being a possible vehicle. Laboratory workers handling the organism have developed Q fever. Outbreaks similar to that in Queensland were also found to occur in meatworkers in the United States.

In the past 16 years many naturally acquired human cases of Q fever have been reported from various parts of the world. In World War II it appeared in epidemic form and it was thought at first to be of the nature of virus pneumonia; laboratory studies established the illness as Q fever due to C. burneti.

Q fever has two important differences from other rickettsial diseases: there is no rash in Q fever and it produces no agglutinins against Proteus strains used in the Weil-Felix reaction. C. burneti has a very wide host range. Vectors in Australia include the cattle ticks, Boophilus annulatus microplus and Haema-

physalis bispinosa. It is thought that infection occurs either by contact with infected beef or by inhalation of dried infective feces of cattle ticks in the dust from hides. Probably infection in man occurs more often by inhalation than through the skin.

Treatment of patients with chloramphenicol or aureomycin is found effective. Clinical improvement is rapid, fever abates in from two to three days, and complete recovery follows. Prophylaxis against Q fever can be applied (1) by protecting man against infection from the animal carrier or from infected material, and (2) by the elimination of the sources of infection. It is mainly a problem for experts in veterinary public health and the solution depends essentially on accurate knowledge of the epidemiology of the disease. Preventive measures include control of the common animal reservoirs, of air contamination, of milk supplies, and of exposed individuals (protective clothing, respirators, and immunization). Heat treatment of milk and milk products would eliminate the possibility of infection from those sources.

Brucellosis

The undulant fevers of man arise from infection by one of the three Brucella organisms—B. melitensis, B. suis, or B. abortus. The story of Malta fever in man is well known, for the illness was recognized as a clinical entity 100 years ago and the causative organism was isolated in 1886 by Bruce in Malta from the spleen and the blood of sufferers. It was later found that the organism was present in milk from apparently healthy Maltese goats and that the sera of most of the goats contained agglutinins against it. The disease among the servicemen on the island quickly declined when the consumption of raw milk stopped.

Some years later in France it was found that sheep and also large cattle sometimes carried a similar infection, and might transmit it to man via milk or infected discharges. Bang in Denmark isolated B. abortus in 1897 from contagious abortion cases in cattle. Some years later, Alice Evans in the United States suggested the possibility of human infection and subsequent studies established the fact.

In summary, B. melitensis, B. abortus, and B. suis may all infect cattle, sheep, goats, or swine, and man may become infected with any one of the organisms from any of the animals. Of the three infections in man that of B. melitensis is most severe and that of B. abortus the mildest.

Brucellosis is an infection common in animals in Australia, but not frequently reported in people; veterinarians, farmers, and meatworkers occasionally contract it. Illness due to B. melitensis in human subjects as a relapse of infection contracted in the Mediterranean area has been reported in South Australia, and probably elsewhere in Australia, but I know of no infection from a local source.

Infection of cattle with B. abortus is common throughout Australia. In cows the only clinical evidence of infection is the occurrence of abortion; bulls suffer from orchitis. Watts estimates that 32,000 cows in South Australia are infected: the total cow population of the state is about 170,000. The raw milk reaching Adelaide is heavily infected; fortunately pasteurization effectively clears it. Infection of man by B. abortus from milk is probably uncommon; abrasions of skin of dairymen handling infected cattle being the common avenue.

Stevenson at the Science Congress described his work with abattoir workers. He used two tests, the Coombs' antiglobulin test and the "Brucellergen" skin test; in a group of 71 persons he found close correlation of results. Stev-

enson also commented on the increase in the number of cases reported in Victoria in recent years; he thought doctors were coming to recognize Brucella infection as one cause of ill-defined fevers. The aphorism "what you don't think of, you don't diagnose" is apposite.

Cooperation of doctors and veterinarians can effectively control brucellosis. The vaccination of all young animals with Strain 19 against brucellosis, the elimination of all infected animals, and the pasteurization of all milk supplies would stop the spread of the disease. I have observed, as other physicians have done, that human infection from Strain 19 can occur from accidental inoculation, so care should be taken by those handling it.

Leptospirosis

The disease described by Weil in 1886 was a serious one. It had long been known as a febrile illness associated with jaundice and occurring especially in barrack life. Rigors, headache, pains in muscles, and conjunctival injection were common features, some observers regarding the eye signs as a useful diagnostic point. The large tender liver, the renal involvement, the severe jaundice, and the petechial hemorrhages into skin and mucous membranes were generally to be noted. Relapses were common—up to 20 per cent of cases. Death occurred in about 25 per cent of those attacked. In Japan in 1915 Inada and his colleagues established the cause of Weil's disease to be Leptospira icterohaemorrhagiae. In 1916 the disease attacked troops in Flanders and since then cases have been reported all over the world. Fairley found cases among London sewerworkers in 1934.

We have lately become interested in leptospirosis in Australia. It is a typical animal reservoir infection, usually with a typical occupational bias. Infection may be direct, but more frequently it occurs when Leptospiras, passed in the urine of infected animals, contaminates water, wet soil, or wet vegetation (such as sugar cane) and eventually enters the body through abraded skin or mucous membranes. Beside the classic Weil's disease, many other fevers of human beings have been proved leptospiral in nature. Obscure fevers occurring in the East Indies, in Japan, and in Queensland have been found to be of the group. The Queensland Institute of Medical Research has reported finding the L. canicola in two patients—the first time that organism has been found in Australia. Two other strains new to Australia have also been found and active research is proceeding.

Recently, occupational infection has been less frequent. "Formerly it was thought that leptospirosis, as it occurred in North Queensland, was essentially an occupational disease occuring amongst those associated with work in the cane fields, with, of course, an occasional infection with L. pomona in dairy farmers. It would now appear that this occupational association is not such a characteristic feature, since the majority of cases from whom accurate records are available have had little or nothing to do with the cane fields. Leptospirosis has occurred amongst children, aborigines, housewives, miners, timber cutters, carriers, and a dental nurse, etc. This applies not only to infections with the new type of Leptospiras but also to L. australis A. and L. australis B., both of which were formerly regarded as occuring typically among cane-workers." *

In Queensland three groups have occurred. The first, caused by L. icterohaemorrhagiae, is the classic Weil's disease. It is found in urban and coastal areas in people who come into contact with and are infected from

* 1951–1952 Annual Report on Health and Medical Services, Queensland, Australia.

Rattus novegicus or Rattus rattus. The next group includes "the cane fields" leptospiroses, the carriers being native rats and bandicoots. The third group occurs in people having contact with pigs, cattle, and calves. In addition, L. canicola and L. hebdomadis have been isolated together with other strains not yet identified.

Leptospirosis has occurred in Victoria due to L. pomona and L. mitis. It has been found in workers in the dairy and meat industries as an influenza-like illness often accompanied by meningism and iridocyclitis. L. pomona and L. mitis also cause endemic disease in cattle and pigs. Dogs, rats, and bandicoots have also been found to harbor Leptospiras, and much more investigation remains to be done.

The disease in man has all degrees of severity, varying from mild infections recognizable only by serologic test to serious, sometimes fatal, illnesses with deep jaundice and profound prostration. It usually begins after an incubation period of from six to 15 days as an acute febrile illness which runs an irregular course. Conjunctival injection is a prominent and almost pathognomonic symptom. Although jaundice may appear in two to three days, at least 40 per cent of human cases do not show jaundice.

Derrick in Queensland has isolated 11 types of Leptospiras. Sutherland has found that calves and cows often carry the infection without showing ill-effects. The organism can survive in mud and water and enter skin through cuts and abrasions. Men working barefooted in infected areas are at serious risk.

The control measures advised are: (1) Control of natural reservoirs, destruction of rats, and the elimination or treatment of infected pigs and infected dogs; (2) control of moist conditions favorable to Leptospiras, including the proper drainage of cane fields, cowyards, and piggeries; and (3) protection of the skin by means of protective clothing, waterproof boots, overalls, and gloves, and protection of the mucous membranes of the mouth and nose by avoiding swimming in infected water.

Psittacosis

Although Miles and others have found that psittacosis-ornithosis viruses infect a wide range of birds in Australia, few human cases of disease have been recorded. Probably many mild cases are not notified, and that would offset the high mortality rate, for it is likely that only the seriously ill cases are reported. Nevertheless, it seems certain that the disease in Australia does not constitute a major public health problem.

Australia was thought to be free of the infection, but in 1934 the virus was isolated from Australian parrots. Burnet found the disease to be enzootic among wild and captive parrots; epizootics sometimes occurred. Interest in the disease as a public health problem in Australia was then stimulated by Dr. J. H. L. Cumpston, commonwealth director-general of health at the time. Cases of human infection were reported and studied and the virus was isolated on many occasions. The virus has been found in parrots from all states of the Commonwealth.

In human subjects infection occurs from breathing infected dust from captive birds and their cages; the clinical features of the illness have been fairly constant. One or two weeks after contact with infected birds, the victim experiences malaise, fever, anorexia, vomiting, and aching pains in the limbs. Rigors, sweats, and chest pains may follow. Cough is frequent. Sputum may be absent or scanty and sometimes chest signs are lacking. Generally, the patchy areas of consolidation of lung tissue are detectable in three or four days. The diagnosis of psittacosis as the cause of

the pneumonic process depends on four features: the clinical events, the history of contact with an infected bird, the isolation in the laboratory of the virus from the sputum, and a positive response to the complement-fixation test for psittacosis virus.

Several workers have reported that, although penicillin in large doses is efficacious in treatment, the host may become an immune carrier of the virus. For that reason aureomycin or terramycin is preferred. Before the newer antibiotics were available the case mortality rate in human infections was about 20 per cent. It is probably now below 3 per cent. In patients under 40 years the outlook is generally good.

There is a vast reservoir of infected wild birds in Australia. As long as birds are being captured and introduced to aviaries, transmission of infection to human subjects is likely from time to time. Young, recently captured wild birds, sick birds, birds kept in crowded and dirty conditions—those are all likely to spread infection.

Arthropod-Borne Encephalitis

Two years ago Burnet presented at the Annual Meeting a masterly review of this subject in its Australian aspects, and as I have had no intimate association with cases and their investigation, my comments shall be brief.

At Mildura, Victoria, in January and February, 1951 (our summer months), a sudden outbreak of severe encephalitis developed; there were 40 patients, and 17 of them died. A similar illness had occurred in western New South Wales in 1917–1918. There were in that outbreak 128 cases with 85 deaths. Serologic studies suggest that the outbreaks were due to antigenically indistinguishable viruses.

The two areas affected lie in the basin of the River Murray. The recent illness has been named Murray Valley encephalitis; the earlier one had been called Australian X disease. The infection is related to, but apparently distinct from, Japanese B encephalitis.

Anderson reports on the examination of wild and domestic birds in the Murray Valley area for neutralizing antibody to the virus isolated from sufferers. The antibody was found in many species of wild bird, especially water birds. He concluded that many species of wild bird and domestic fowl are transient natural hosts of the virus.

Miles found evidence that Murray Valley encephalitis (X disease) occurs in South Australia when there are epidemics in New South Wales and Victoria. Serologic evidence showed that in the late summer of 1950–1951 many human beings and horses were infected along the South Australian part of the Murray and that widespread but not so numerous infections occurred in the northern agricultural areas.

There is general agreement in regarding the disease as primarily one of wild birds, almost certainly transmitted by mosquitoes. Evidence strongly suggests that it is endemic in the Northern Territory and probably also in Queensland. Miles noted that its occurrence in the south has always followed a wet spring in the north and, at least in 1951, was associated with an unusual irruption of northern water birds into New South Wales, Victoria, and South Australia. It is suggested that outbreaks are only likely to occur following the appropriate meteorological conditions. In short, the natural reservoirs are birds, the vectors mosquitoes, and the secondary hosts horses and man. The ecological features provide a fascinating study.

Silent Infections and Low Fevers

In the early days of the germ concept of infections the current idea was that once the disease-causing germs gained entry into their intended victim a ter-

rific battle ensued—and one side had to win. There was no halfway—it was victory or death. Gradually other ideas came. The seed-soil concept, for instance. Some seed falls on stony ground—the germ enters an ecologically unsuitable medium, fails to establish a hold, and perishes.

The modern view is more complex:

1. Short active war, resulting in (a) slaughter of all invaders, or (b) death of defender.

Acute infections are so represented. There is illness, generally with clear-cut symptoms. The man either dies or recovers. If he recovers he generally is left better equipped to ward off any similar future attacks, for he has acquired active immunity.

2. Long drawn siege, resulting eventually in (a) repulsion of invaders, or (b) death of defender.

This represents chronic infection. The illness is a quiet smouldering affair, often with mild fever, and vague ill-defined symptoms. Even if the defender withstands the onslaught he may be left exhausted and perhaps disabled.

3. Cold war, with various truces and compromises.

Clinically this represents silent infection with no evidence of illness. Biologically it comprehends the main features of parasitism, symbiosis, and commensalism. The man comes to be more or less "on good terms" with the germs. But he may become a chronic germ carrier and pass on the infection to his fellows.

The whole business of infections is a mass of problems in ecology. Man and parasites alike share in the struggle for existence.

The vague illnesses and fevers associated with drawn out infections present problems for clinicians and for health authorities. Accurate diagnosis—essential for rational defense—is often difficult to reach. In World War I doctors labeled those fevers "pyrexia of undetermined origin"—shortened to "PUO." The use of PUO was the first step in the modern initial game: UNRRA, UNESCO, WHO, FAO, and the rest. Long before PUO came into use, the old-time doctors spoke of "febricula"—the little fever, and how pretty it sounds!

Of course, PUO may be a short acute illness from which the patient recovers before his doctor can make a diagnosis, and in the chronic infections, with vague symptoms, diagnosis may also be difficult. The silent subclinical infections may not concern the clinician, but they do worry the laboratory men and the public health specialists. The public health laboratory is an essential today. Tests, often of complex and elaborate nature, are needed not only to establish diagnosis of illnesses, but to detect the signs of subclinical infections. The tests dealing with some of the zoonoses are set out in the WHO publications and elsewhere.

The zoonoses we have been considering are often quiet and even silent infections in man or beast, or in both. It is only when the occasional hot battle rages that we are led to study the far more extensive and long drawn cold war.

The theme need be pursued no further, beyond saying that in Australia we are working at those zoonoses, often so quiet in their attack. We are urging clinicians to submit specimens for laboratory investigation from their patients with ill-defined fevers. We think it likely that brucellosis, leptospirosis, rickettsial, and virus diseases may be among us in this "low" form, and to a greater extent than previously estimated. Where the people's cooperation is essential, as in fighting hydatid disease, we are building up our health education work. We seek the help of physicians, veterinarians, and laboratory experts in studying the zoonoses and in eliminating the hazards to the public health.

Endemic Goiter in Honduras

ERNESTO A. BORJAS, M.D., and NEVIN S. SCRIMSHAW, Ph.D., M.D., F.A.P.H.A.

Are there other factors than deficiency of iodine intake responsible for some endemic goiter? This study, coming from Central America, suggests that there may be.

Although endemic goiter has long been recognized as an important public health problem in parts of this hemisphere, little has been known until recently about its specific distribution in the area of Central America and Panama. Since the establishment of the Institute of Nutrition of Central America and Panama (INCAP), studies of the incidence of endemic goiter have been carried out in cooperation with the public health departments of the countries of Costa Rica, El Salvador, Guatemala, Honduras, and Panama. Surveys are now in progress in Nicaragua.

Preliminary reports by Muñoz [1] and Pérez [2] in 1951 called attention to the high incidence of endemic goiter and the frequency of large and nodular goiter in Guatemala. In 1953, Cabezas, et al.,[3] reported in this Journal the results of a survey of nearly 35,000 school children in El Salvador in which the incidence of endemic goiter outside of the capital city of San Salvador was found to be 22.8 per cent. In a recent survey of over 10,000 persons of all ages in the province of Herrera, Panama, Reverte [4] found an incidence of 46.6 per cent endemic goiter. The present paper reports the results of an endemic goiter survey which included nearly 6 per cent of the children of school age in Honduras.

Material and Methods

A total of 12,644 individuals in 15 departments of the country were examined, all but 352 of whom were school children. The total number of school children in Honduras was estimated at 213,000 in 1953. The sample comprised slightly less than 1 per cent of the total population of approximately 1,370,000. A sixteenth department, representing territory disputed by Nicaragua and accessible only by sea, was not visited.

The examinations for goiter consisted of an initial inspection of the thyroid area followed by a careful palpation of the gland. Normal size was considered to be approximately that of a large lima bean, but this concept had to be adjusted to the age and size of the person examined. A thyroid gland was classified as size 1 if it was larger than four to five times normal size but was not readily visible with the head in normal position. Glands which were large by palpation and visible with the head in normal position were classified as size 2. Those goiters which were readily visible at a distance of several meters were classified

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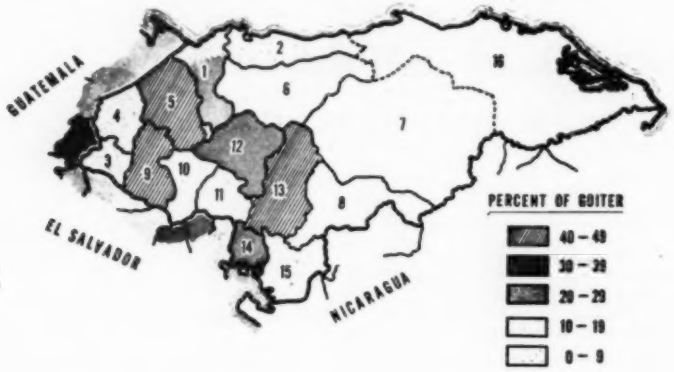
INCAP Scientific Publication I-39.

Figure 1—Geographical Distribution of Endemic Goiter in Honduras



Department	Population	No. Examined	Per cent Positive
1. Cortés	125,728	1,216	13.1
2. Atlántida	63,582	1,941	2.3
3. Ocotepeque	45,673	338	17.4
4. Copán	95,880	440	15.4
5. Santa Bárbara	96,397	232	42.6
6. Yoro	98,700	528	3.7
7. Olancho	83,910	835	2.0
8. El Paraíso	82,572	784	13.3
9. Lempira	90,908	234	45.7
10. Intibucá	59,362	257	2.3
11. La Paz	51,220	382	17.5
12. Comayagua	68,171	854	32.7
13. Francisco Morazán	190,359	3,336	41.1
14. Valle	65,349	305	36.3
15. Choluteca	107,271	962	23.0
16. Colón (Disputed Territory)	35,465	0	..

as size 3. Regardless of the size of the gland, any nodules present were recorded. These criteria are essentially those of Kimball[5] and have been followed in previous INCAP studies.[1-3]

Results

The over-all percentage of goiter among the persons examined was 22.6. The number of persons examined in each department, the percentage of positive cases, and the geographical distribution of endemic goiter in Honduras are shown in Figure 1. Since no consistent differences could be observed between urban and rural school children in the various departments, only the combined figures are given. The incidence of endemic goiter in the capital city of Tegucigalpa, Department of Francisco Morazán, was 40.7 per cent among 2,822 children as compared with 43.6 per cent among 464 children examined in rural areas of this department. Of the total number of goiters observed, only 14 per cent were size 2 or 3 and approximately 1 per cent were nodular.

The distribution of the goiters by age and sex is given in Table 1. A significantly higher incidence of goiter was found in the girls as compared with the boys. A slightly higher (barely statistically significant) incidence was seen during adolescence in both boys and girls than during the primary school years. The 352 individuals over 19 years of age are not included in this table, since they came mainly from a

Table 1—Incidence of Endemic Goiter in Honduran School Children Classified by Age and Sex

Age	Boys		Girls	
	No. Examined	Per cent Positive	No. Examined	Per cent Positive
6–12	4,092	15.5	5,418	23.2
13–18	1,192	18.5	1,590	29.7

limited and goitrous area and cannot be used for comparing age distributions of goiter in country-wide samples.

Discussion

Although it would have been desirable to have a larger sample from some of the departments, the data clearly indicate that endemic goiter is a serious public health problem in those departments which contain most of the population of Honduras. It appears that even with the very conservative estimate obtained by the criteria used, nearly one-fourth of the population of Honduras has thyroid glands pathologically enlarged.

The frequency and severity of endemic goiter varied among the different departments, but the incidence of endemic goiter was greater than 10 per cent in 11 of the 15 departments and greater than 20 per cent in seven of them. If the four departments in which goiter does not appear to be a problem are omitted from the calculation, the remaining departments (containing three-quarters of the country's population) had an over-all incidence of 29.1 per cent.[*]

It is of interest that endemic goiter does not seem to be a serious problem in the coastal lowlands, but is found in very high incidence among persons living on the central plateau. Provinces such as Copán and Ocotepeque, in which the population examined live in river valleys, are intermediate in incidence. Only two areas within the department of Cortés were studied and these differed greatly in incidence. For this reason the department is shown in Figure 1 to have a lower incidence in the area near the coast than further inland.

Despite their high frequency, the majority of goiters encountered were not severe. Only about 14 per cent were visible without careful inspection and palpation, and the incidence of nodular goiter was low. In severity of goiters encountered, Honduras is intermediate between Guatemala, where visible and nodular goiters are common,[1, 2] and El Salvador in which nearly all of the goiters recorded were size 1.[3]

The salt used in Honduras, as in the other countries of Central America, is entirely derived from the sea. It is crystallized by solar evaporation and usually further dried with artificial heat. The WHO study group on Endemic Goiter which met in London in 1952 recommended 1 part of iodine per 100,000 parts of salt as adequate for the prophylaxis of endemic goiter.[6] However, the initial iodine content of the salt commonly used in Central America is considerably more than this suggested amount.[3] It seems quite possible that goitrogenic factors as yet largely unidentified increase the amount of iodine required in Central America

[*] The sampling of the departments was not sufficiently uniform to justify the small correction which would result from weighting departmental incidence figures for the relative population of the department in computing over-all averages.

in excess of that needed in areas within the experience of the majority of the 1952 study group. The widespread deficiency of vitamin A in the diets commonly consumed in Honduras [7] and the rest of Central America,[8-13] together with the reported goitrogenic effect of a deficiency of the vitamin,[14-16] has led to the suggestion that this is one factor in the apparently greater iodine requirement.[3]

After considering the observations submitted to it, the Third Latin American Conference on Nutrition Problems in Latin America held in Caracas, Venezuela, 1953,[17] concluded that where iodization of salt is needed, the level should not be less than the 1 part of iodine in 20,000 parts of salt as used with success in Colombia nor greater than the 1 part in 10,000 found satisfactory for many years in the United States and Canada. This recommendation has been accepted by INCAP and the authors concur in it for the reasons cited.

On the basis of these data and conclusions, it is strongly recommended that salt for human consumption in Honduras be iodized at the above level. It should be noted that the term "iodization" is used to refer to the addition of iodine in any form. This is of importance since recent studies indicate that iodate is effective [18] and that it has important advantages over iodide for supplying added iodine to salt in tropical and underdeveloped areas.[19]

Summary

A total of 12,292 school children and 352 adults in Honduras, comprising nearly 1 per cent of the population in all 15 departments, have been examined for endemic goiter by palpation and inspection of the neck. The survey showed nearly one-fourth (22.6 per cent) of the persons in the country to have pathologically enlarged thyroids. Slightly less than 14 per cent of the goiters were readily visible with the head in normal position and fewer than 1 per cent had discrete nodules.

Omitting the four departments in which endemic goiter was not found to be a problem, the remaining three-quarters of the population had an overall incidence of 29.1 per cent. Endemic goiter is thus considered to be a serious public health menace in Honduras and the iodization of all salt for human consumption is recommended. Although goitrogenic factors are believed to be important, none has been identified, except for the possible importance of the very widespread deficiency of vitamin A. A level of iodization of not less than 1 part of iodine in 20,000 parts of salt nor more than 1 part in 10,000 is recommended.

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Final Health Man Power Source Book

The Public Health Service has now completed analysis of health man power by publishing Sections 4 and 5 of its Health Man Power Source Book. Section 4 provides county data on 16 health occupations, including physicians, nurses, veterinarians, dentists, hospital attendants, among others, but including neither sanitary engineers nor health educators. For every county, state by state, in the United States are shown population and population density, effective buying income, retail sales, number of hospital beds, and the number of persons in the 16 selected occupations, all based on the 1950 census. Perhaps unfortunately, subtotals for the various states are not given. Additional tables include data about cities, trading areas, rural areas, and others.

Section 5, again based on the 1950 census, provides data on detailed occupations within the health service industries—hospitals and health services excluding hospitals. Information reportedly never before available is included on occupation, class of workers, and sex of persons in these two health service industries. Marion E. Altenderfer and Maryland Y. Pennell are joint authors in each case.

Health Man Power Source Book, Section 4, $1.75; Section 5, $1.00. U. S. Gov. Ptg. Office, Washington 25, D. C.

An Appraisal of the Future Trend of Mosquito Control Measures

HAROLD FARNSWORTH GRAY, Gr.P.H., F.A.P.H.A.

We have two general philosophies of vector control. One is to prevent the development of the vector by control of larval production places. The other is to place dependence upon killing the adult vectors. The latter method may appear spectacularly effective at the start and initially inexpensive. But will it remain always successful? Will it continue inexpensive? Can we learn from experience or must each generation learn through its own mistakes?

Many years ago the playwright Eugene Walter wrote a drama of great popularity entitled "The Easiest Way." The moral of this play was that the easiest way a woman could earn a living resulted eventually in her social, moral, and economic ruin.

Since 1946 many public health and nuisance prevention agencies have been following the "easiest way" to control the transmission of disease by various insect vectors, or to prevent the economic damage caused by pest mosquitoes. This "easiest way" has been by the use of modern insecticides of remarkable potency, DDT being the exemplar. The basic concept that insect control could be accomplished most effectively by preventing the development of the larval forms of the vector or pest has frequently been abandoned for measures designed to kill the adult insects after they had been allowed to reproduce themselves, often in vast numbers. But this "easiest way" has many inherent dangers and can lead to disasters.

The remarkable effectiveness of DDT in rapidly reducing the incidence of malaria by residual spraying of dwellings has been, by its results, an almost unanswerable argument in favor of adult insect control by insecticides. In at least one case (that of Anopheles darlingi in British Guiana), this method, used alone, has been responsible for the complete extirpation of an important vector in a large area. Residual house sprays have also reduced Aedes aegypti to the vanishing point in many South and Central American countries, but the technics for its extirpation had been worked out prior to the advent of DDT. In the field of nuisance prevention, the application of insecticidal fogs or aerosols was also very effective at first in some areas, leading many abatement agencies to reduce their source reduction and larvicidal programs in favor of extensive aerosolling. But a few years ago many species of mosquitoes in the Culex and Aedes genera began to develop a tolerance to DDT and related chlorinated hydrocarbon insecticides with increasing failure of adult control measures to give effective abatement. As far back as February, 1949, I branded this method of mosquito control not only as a "confession of failure," but as "an open advertisement of failure." [1] As this method has failed to a steadily increasing extent to give public relief from mosquito annoyance, in spite of increasing public expenditures, technical opinion as well as public opinion is coming to this viewpoint. "Temporary measures result in permanent taxation."

In the field of nuisance prevention,

the substitution of temporary methods of adult insect control for the more permanently effective methods of larval control through elimination or restriction of the area of mosquito-producing water is not too serious a matter. The mistake can be corrected, after some waste of time, effort and money, and some unnecessary public discomfort. In both Florida and California the failure of insecticides to prevent marked public discomfort is now forcing the mosquito abatement agencies to put increased effort into mosquito source reduction methods. But in the field of disease prevention, unnecessary sickness, and especially unnecessary deaths from a vector transmitted disease because of ill-advised and deficient preventive measures cannot be condoned. Explanations of the reasons the victim died are of little comfort to the corpse.

The very success of the residual spray programs in many tropical countries is laying the foundation for an ultimate debacle of monumental proportions, if the inherent dangers are not recognized and adequate steps taken to prevent these dangers. Prior to the advent of the new insecticides, men like Watson and many others had worked out by observation and experiment a number of effective and relatively simple larval control measures for the important anopheline vectors of malaria. Some were termed "naturalistic" methods and were designed by relatively minor changes in the environment to reduce the production of an important vector species in a particular area or region. Shading against Anopheles minimus and A. maculatus; clearing against A. umbrosus; salinification of marshes against A. albimanus; and freshening of marshes against A. labranchiae are examples. In addition, such mechanical measures as stream bed intermittent flushing have been successfully used in many areas. These are methods that can be installed and maintained with local materials, local labor, local intelligence and understanding of purpose, and within local economic ability. They have been, and can still be, effective in reducing the relative numbers of vector anophelines below that point at which an endemic malaria can be maintained in a community.

It has been, and still is, entirely proper and reasonable that the rapid reduction of disease transmission by mosquitoes should be effected by the residual application of DDT and similar insecticides. Lives are being saved and much sickness prevented by this measure. Its relatively low initial cost and relatively prompt results are great advantages, but sole reliance on this measure can, and probably will, result in a tragedy. It must always be kept in mind that another major war could stop the supply of modern insecticides to many if not all tropical and semitropical countries with disastrous results. Too great dependence on the insecticides will have resulted in loss of the knowledge and technics of the relatively simple naturalistic control measures, as well as drainage, filling, and even oiling. With no DDT, in a few months the unrestrained hordes of mosquitoes would wreck havoc in a population which, because of recent relative freedom from infection, will have lost any acquired partial tolerance to malaria; the result may be astonishingly high death rates and morbidity rates.

It is also not inconceivable that a severe economic depression in the Western nations might also have a similar result by necessitating the stoppage of present assistance programs.

There is also the possibility of the development of resistance to the chlorinated hydrocarbon insecticides by the various Anopheles species. They have been much slower to develop resistance

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than Aedes or Culex species, but there is no reason to believe they will not ultimately do so. There are some present indications that resistance is developing in A. quadrimaculatus, for example. Perhaps the substitution of EPN (ethyl-O-p-nitrophenyl thiobenzenephosphonate) or chlorthion (0,0, dimethyl, 0, 3, chloro-4-nitrophenyl thiophosphate) may be the answer temporarily, but when will the mosquitoes develop resistance to the organic phosphate group of insecticides? Have we not got ourselves into a continuing "rat race" on this basis?

There is a further aspect of the problem worthy of consideration. In the United States of North America much practical emphasis has been placed on the control of pest mosquitoes for public comfort, even though lip service is usually given to the communicable disease aspect of the problem (e.g. Western equine and St. Louis encephalitis). In tropical countries, the emphasis has been placed on, and generally limited to, the control of specific disease vectors, and public comfort has been rather ignored. But one reason for the ready acceptance of the house residual spray programs by the people benefited is the concurrent relief from other mosquito species within houses, as well as a reduction in flies, fleas, and other household pests. This increase in public comfort will, sooner or later, result in a widening and intensified public demand that public health agencies give attention to these aspects of public comfort, as well as to public health per se. If the health authorities will not or cannot give these services, public demand will sooner or later bring about the institution of special agencies outside the health departments to perform them. If we look upon public health as something more than the prevention of communicable disease, there is no reason why health departments should not extend their activities to related fields of public comfort, through well designed and executed measures for improvement of the environment.

We have two general philosophies of vector control. One is to prevent the development of the vector by such environmental control measures as will minimize the materials in which the vectors can reproduce. In fly control it is sanitation which removes and destroys or renders inaccessible the decaying organic materials in which fly larvae develop. In rodent control it is ratproofing to prevent the nesting of rats, plus cutting off their food supplies. In mosquito control it is either the elimination of water in which larvae can develop or the rendering of unremovable water unsuitable to the development of a dangerous vector species.

The other philosophy is to put dependence upon killing adult vectors, frequently because these appear to be spectacularly effective at the start and appear to be initially inexpensive. But will these methods always be successful, and will they ultimately be inexpensive? Can we learn from experience or must each generation learn the hard way through it own mistakes?

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Suicide Prevention as a Public Health Problem

JOHN F. OLIVEN, M.D.

There is a challenge here to public health administration to concern itself with the prevention of the 10th to 12th leading cause of death. Can we afford to continue to do nothing about it?

A substantial number of lives each year end in self-destruction. It is widely agreed that existing suicide statistics are absolutely minimal. True figures may not ever be obtainable, but if one may be allowed an "educated guess" it could be said that in a typical town of 100,000 inhabitants at least 200–250 people will try to kill themselves each year; of these at least 25, possibly 40, will succeed. In some urban, but not necessarily metropolitan areas, up to four or five times as many persons may at times be involved.

Suicide Prediction

At first glance it would seem all but impossible to prevent any appreciable number of these deaths, except perhaps in the most obvious cases. We do not know with too much certainty, for instance, which melancholic patients will, or will not, try to take their lives. These people presumably keep their suicidal plans and preparations carefully to themselves or even seem to commit the act on sudden impulse.

Actually such a pessimistic view is no longer quite warranted. For one thing, few, if any, persons become suicidal in one day—weeks or months, and occasionally years of a painful seesaw struggle between death impulses and the instinct of self-preservation usually precede the act. We still cannot "read" these early signs efficiently, but there has been some notable progress in this direction in recent decades. As an example it might be mentioned that we have learned that many would-be suicides threaten or talk about the act beforehand, whereas it used to be generally believed that "suicide talkers" need not be taken seriously.

Among the most important next steps toward a predictive system will be the search for specific, common characteristics in the personality and life history of groups of suicidal persons. There are excellent indications that such exist, but most observations to date had to be based rather one-sidedly on overt psychiatric, i.e., "selected" case histories. What is needed are searching studies on unselected (consecutive) suicide cases based largely, of course, on retrospective information given by surviving relatives and friends. Examination of unsuccessful suicides has taught us much of what we know, but this approach has its limitations, because there are grounds for the suspicion that "attempters," as a group, differ somewhat from successful suicides as a group, even after excluding the obvious "suicidal gestures." We may not be able to induce the relatives of suicides to talk, but cooperative assistance from coroners, medical examiners, health officials, and others would go a long way here.

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Such an approach would also increase our understanding of supposedly "motiveless" suicides and eventually their prevention. Much has been learned of late about those cases formerly classed as "totally unexplainable," [1] for some of them have been shown to be preceded by certain unspectacular, but relatively highly suicidiferous mental disorders.

Remediable Shortcomings

But even the predictive and preventive knowledge we now possess is not being intelligently utilized. For instance, many general hospitals and practitioners continue to deal with attempted suicides in a rather offhand manner, reviving and restoring them and then sending them on their way. Actually, many attempters are potential repeaters and most of them should not be dismissed without close attention to their mental status. It has been suggested that suicidal attempts be made a condition reportable to the health authorities. This may be too drastic, but consideration of something in this direction would seem worth while.

Many practicing physicians, visiting nurses, and allied health workers still seem not to connect suicide danger in their own minds with the less obvious, more insidious types of potentially suicidiferous derangements of which we now have knowledge. Of course, it is always a diagnostic feat to recognize a suicidal risk behind a facade of unspecific, multiple symptoms [2]; but professional people too frequently cling to the erroneous belief that suicide-proneness is limited to so-called "classical" psychoses, e.g., manic-depressive disease, and that most other cases can be handled by a "common sense" approach.

Even when aware of a suicidal risk many physicians and allied health workers lack modern knowledge about the way to proceed or what to avoid with these patients. They may try to exhort, shame, taunt, frighten, dare, or argue them out of their suicidal brooding, which is sometimes worse than useless. Or, when advising the relatives of such a patient to take "suicide precautions," doctors or nurses sometimes overlook the most obvious possibilities because no one has alerted them. Others are simply afraid of dealing with any suicidal risk and hope to avert calamity by "letting sleeping dogs lie"; they should be aware that a knowledgeable, courageous tackling of these cases offers the best hope. Professional schools and postgraduate courses are becoming concerned with these problems, but it may be necessary for local health officers to bridge the gap between past and present-day teachings and to help bring up to date in this respect those who are still unaware of the more modern approach.

To many doctors the tackling of a suicide risk is equivalent to courting legal and public relations trouble. Indeed, lawsuits for malpractice, violation of privilege, assault or false imprisonment have occurred, and one such case in a community can frighten local practitioners for years. Often the patient's family instigates such an action and, even in the presence of a fairly obvious suicide risk or with the patient himself consenting to psychiatric treatment or hospitalization, the relatives may resent a suggestion that suicide is possible "in our nice and decent family." A number of states offer the physician little or no statutory protection against the legal action that may result. Also, the various codes of medical ethics make no provision for this type of contingency so unique among medical problems.

Another shortcoming, partially remediable, is the type and distribution of facilities for short-term psychiatric care. (Most acute suicidiferous derangements are, fortunately, of limited duration). Even though ambulatory diagnosis and treatment are feasible in a number of cases, the only facility within the pa-

tient's geographical or financial reach may be a state hospital for which admission procedures often are, or appear to be, extremely cumbersome, especially for the less "obvious" risk cases. Often it is simply a matter that no one has bothered to tell local physicians how to secure emergency admission. In some cases doctors compromise by admitting a suicidal patient to a general hospital—a dangerous practice in almost every respect. (This excludes, of course, general hospitals with a psychiatric department).

The wider use of competently staffed community mental hygiene clinics would be a prime answer here. Even small communities need not be excluded, for they could be served by "traveling" or circuit clinics, now largely limited to the child guidance field. It has been the experience that local physicians and community agencies tend to make good use of such clinics once they become available. Where no consultation facilities exist it would seem incumbent upon the local health officer to acquire enough experience and knowledge to assume an advisory role in emergency cases involving a suicide risk. On the other hand, it seems increasingly important that there be stricter regulation by state health, education, or licensing authorities on the activities of self-styled psychologic healers, cultist counselors, hypnotists, and untrained lay therapists who are engaged in unsupervised solo practice. Sometimes using aggressive self-advertising, these individuals attract people with often serious psychiatric disorders. They become potentially dangerous by what they do, but even more so by what they may fail to do.

It may also be worth mentioning that even in the most isolated communities no severely suicidal patient need be sent on his way unattended. We have in pentamethylenetetrazol (metrazol), intravenously administered, a fairly efficient emergency "antisuicide" (actually "antimelancholia") drug. Its indications and the technic of administering it can be learned by any physician and probably should be learned by health officers in certain rural areas. Although this method of treatment is no longer in general use because of certain drawbacks, and although it cannot replace psychiatric attention, as a stopgap measure it should not be forgotten.

Antisuicide Laws

Is there any deterrant value in "antisuicide" laws? In various historic cultures suicide was considered a major wrong against the king, the community, or the ruling church. The bodies of suicides were mutilated or dishonored; their fortunes confiscated; and unsuccessful suicides were severely punished. The canonical decrees forbidding suicide have retained a strong influence into our time. During vast "suicide epidemics" in 19th century England and France [3, 4] stringent emergency laws against suicide were decreed, and reportedly enforced with success.

Abrogation of suicide laws first occurred during the French Revolution (1791). The trend in this country has been to remove suicide from the lawbooks. New York State repealed the statute which made suicide a crime in 1919, but retained the section making anyone assisting or encouraging a suicide criminally liable. In a few of our states suicide attempters are occasionally still tried in court. As to the deterrent effect of such laws, the consensus in this country assumes that it is scant or nil.

Control of Suicidal Means

Would it be possible to lower the suicide rate by trying to control the means of suicide? Obviously we cannot confiscate all knives or ropes or bar every high window, so there will always be those who kill themselves no matter

how difficult it is made for them. But some other types of suicide-prone individuals might benefit from such methods. Among them are some genuinely suicidal persons who are "fixated" on one particular method to the exclusion of every other. Under appropriate circumstances they may owe their survival to this mental "block." Others, equally suicidal, are strongly repulsed by all but a few among the methods with which they have gained hearsay familiarity and may similarly survive. In still others who are suicidal, but less "aggressively" so, an acute melancholic episode may run its course without fatal mishaps if obvious suicidal opportunities can be kept from intruding on their awareness or from being accessible to them.

But is it feasible to take community-wide measures to protect the vulnerable few from harming themselves? Suicide methods are related to the civilization to a large extent. In our time piercing weapons have largely given way to guns, poisons to gas and hypnotics, and the mountain precipice to the tall building. Most recently there has been an increase in suicides by automotive mishap simulating an accident. The locality plays its part. Where men or families customarily own firearms, self-inflicted gunshot wounds increase, while in large cities easier access to high places or subway platforms is reflected in the tabulations.

High leaps—mostly from sightseeing platforms, bridges, roofs, and windows—predominate in the cities, but people have climbed trees, telephone polls, church towers, derricks, storage tanks, cliffs, and mountains to kill themselves. Probably nothing can be done about most of the latter, nor about leaps from residential and most business buildings; but this is not so for certain public structures. Such locales as Niagara Falls, Washington Monument, London's Waterloo Bridge, and the tourist galleries of certain famous skyscrapers were almost "traditional" suicide spots until the owners or officials took preventive measures. At one time the railings of Waterloo Bridge were purposefully painted a pleasant light green, after which death leaps reportedly fell off sharply. Those committing suicide from famed locales seem to include many whose lethal resolve can be considerably swayed, one way or the other, by how easy, or "suggestive," a certain method is made for them. Today, many public places are protected by the management as a matter of course (continuous guarding, nighttime closure, climbproof enclosures, etc.), but it may be desirable to require such precautions.

Suicide by illuminating gas may deserve special attention because of its potential danger to others. Perhaps we can make gas, by chemical additions, so unpleasant to the upper nasal respiratory system and tear glands that potential suicides would be forced to desist before losing consciousness. "Natural gas," now increasingly distributed in some parts of the country may already be supplying a partial answer here. This gas, before burning, is free of carbon monoxide, and asphyxiation probably occurs only when its components (methane, ethane) have greatly diluted the atmospheric oxygen. This takes a long time and may either tire the waiting candidate or attract attention by odor. The medical examiner of an eastern area reports [5] that, "previously, among 180 suicides, 42 had been committed with manufactured illuminating gas, but since the change-over to natural gas no suicide with gas had been encountered among 120 cases" (time period not specified).

The use of barbiturates for suicidal purposes continues in spite of legislation restricting their sale. Suicide-bent persons sometimes exercise great perseverance and cunning in amassing a lethal hoard. Physicians must again and again be alerted against the overprescribing

of hypnotics, especially for depressed patients, and against using major doses as "placebos." A physician recently wrote [6] that a woman who had been under a colleague's care had "1,579 phenobarbital pills" left over from her treatment. Pharmacists need to cooperate by refusing to refill barbiturate prescriptions without a physician's orders, as an accommodation to an old customer who, to them, seems sufficiently "levelheaded" and "all right." Such drugs are sometimes misused by a member of the patient's household. Combinations of barbiturates and emetics, e.g., ipecac, designed to produce automatic vomiting when an overdose is taken, are on the market, but their efficiency and harmlessness have been questioned.[7, 8] It has been suggested [9] that manufacturers produce barbiturates for internal use only as large-sized tablets or capsules rather than in the present diminutive size; this seems technically quite feasible, and such preparations would require larger amounts of water, time, and effort to swallow and be more conspicuous in medicine cabinets which may make at least some suicide-bent persons desist.

Narcotics in lethal doses are mostly accessible only to suicide-bent physicians, nurses, and pharmacists, and probably little more can be done to inhibit this method. Poisons in cleaning solutions, weed killers and animal poisons, or in materials used by chemists, photographers, etc., are less frequently used today, partly because the uncertainty and painfulness of this method has become well known. "Poison" labels may occasionally tempt the predisposed, but they must, of course, remain to prevent genuine accidents. Sales registration in so-called "poison books" is mandatory in some parts of the country and the preventive efficiency of this measure may deserve study.

Suicides by hanging, piercing or cutting, and drowning do not appear to be markedly preventable, except that spontaneous factors here come to our aid, e.g., straightedge razors and hunting knives are becoming rarer, and many sharp household or shop instruments have been replaced by mechanical devices; or, as more people are learning to swim, and more bodies of water cease to be isolated from human traffic, death by drowning becomes more difficult. Even hanging, that seeming perennial among the major methods, may be diminishing because of increasing lack of suitable privacy both indoors and outdoors and absence of sturdy supportive fixtures in many newer buildings. Suicide by automotive and, occasionally, airplane violence may eventually require more attention via certain licensing restrictions. As to self-shooting, one of the major methods, the only conceivable approach would be further restriction of the sale of firearms. There are, of course, limits to this, for it must be remembered that even the most "unlicensable" sport or farm gun can be rigged to make a suicide contraption.

Thus among the methods in major use today only a few seem to offer a reasonable prospect of controllability. Limiting the means of suicide will, in our culture, probably never be a major preventive weapon. It can, however, make a minor contribution which we can perhaps not afford to ignore.

Suicide and Life Insurance

Life insurance has occasionally been suspected of fortifying the lethal resolve of a suicidal policyholder and sometimes even of motivating suicide for the survivors' sake. The belief that genuine or realistic considerations of survivor benefit can influence suicidal impulses has been largely discredited through clinical observation, particularly in the last 15 or so years. People almost never kill themselves primarily because they

wish to benefit survivors, nor do they commit suicide more readily because they know their dependents will be cared for, nor do they refrain from suicide because the survivors will be left exposed.

Although a typical suicidal melancholic may believe and proclaim that he is a failure, a poor provider, and that the family will be better off without him, we are now reasonably sure that he has no genuine, positive interest in how they will fare. This is partly because he is too absorbed in himself to be able to care, partly because his ideas of failure and inadequacy are the result of an acute reasoning distortion (delusion), and partly because his underlying (unconscious) feeling tone is very frequently one of animosity and vindictiveness.[10]

Undoubtedly, there are some cases of suicidal determination which come as close to being "rational" as any act contra naturam can come to being rational, but suggestions for making policies claimproof against suicidal death are as a deterrent probably even more useless than antisuicide laws and are fortunately no longer advocated. Even increasing the "period of waiting" (time from date policy is sold to time when suicidal death becomes an allowable claim) from the now prevailing one or two years to something like five years should be, and generally is, considered contrary to the public good.[11, 12]

Imitative Suicide, Including Newspaper Stories

The role that newspaper accounts of suicides play in inciting certain predisposed persons to self-destruction has concerned observers throughout our modern era. It may well be that certain suicide-prone people, as yet vacillating or fearing failure, take the final step after they have been "encouraged" by another's success, especially, it seems, if the deceased was a public figure or the story was given much space for other reasons. Some such individuals may "travel clear across the country," to jump from a building or bridge which happened to be the locale of their precedent. To label them "show-offs" or "hypersuggestible" does not detract from the reality of their self-destruction. Such "imitative suicides" are not only caused by news stories. A suicide in a certain community, neighborhood, or even apartment building is occasionally followed by an unusual number of local attempts, many by the same method. True "suicide epidemics" have occurred at times, either community-wide, or in schools, military units, reformatories, etc.,[4, 13, 14,15] although seemingly rarely in this country.

More frequent, of course, are cases where a psychoneurotic, nonsuicidal person develops an acute suicide phobia (occasionally an obsession) after reading or hearing about, and "identifying" with, a suicide. They develop an intensely tormenting fear lest they be "swept away" by an irresistible impulse to kill themselves, but actually most of them represent no suicidal risk of any degree. A deterrent effect from news stories on a genuinely suicidal person, for instance, describing the failure of someone's attempt and the injuries suffered, or mentioning the distress of a suicide's bereft family, is doubtful according to best present knowledge.

The problem of imitative suicide certainly deserves attentive study from a public health point of view, but not enough is known about this phenomenon to warrant immediate suggestions to newspaper publishers and others regarding changes in editorial policy in this regard.

Concluding Comment

The mortality statistics for the continental United States indicate that sui-

cide hovers between tenth and thirteenth place among the causes of death, although in some states west of the Rocky Mountains it has recently stood in ninth, eighth, and even seventh place. We may today consider most suicidal deaths a fatal complication of a (usually intrapsychic) disorder. This becomes more meaningful when we consider that in many fields of medicine the old-time "textbook clarity" of such terms as "onset," "cause," or even "disease" have become difficult to maintain in the face of newer understandings about such matters as "predisposition," "reactivity," or psychosomatic components. Many "diseases" have become simply "syndromes" again, and the suicidiferous syndromes are today taking their place among them. Their cause and cure remain the clinician's responsibility, but without increased suicide preventive interest on the part of public health his efforts could remain materially futile.

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1955–1956 Science Fellowships

The National Science Foundation is now accepting applications from United States citizens for 1955–1956 graduate science fellowships, about 800 of which will be awarded to students with special abilities in science. About 100 of the awards are made to postdoctoral applicants, the remainder to graduate student candidates for the master's or doctor's degree in science. The successful candidates are selected on the basis of tests of scientific aptitude and achievements, academic records, and written evaluations of the individual's faculty advisers. Postdoctoral applicants are rated by special fellowship panels without the examination.

Annual stipends are $1,400 for those entering graduate school for the first time; $1,800 for those who need but one more year of training for the doctor's degree; $1,600 for those between the two groups; and $3,400 for postdoctoral fellows. Dependency allowances, tuition and laboratory fees, and limited travel allowances are provided.

Closing date for receipt of postdoctoral applications is December 20, 1954; of all others, January 3, 1955. Fellowship Office, National Research Council, Washington 25, D. C.

A Method of Estimating the Population of Cities

ROBERT C. SCHMITT

Many are confronted with the insistent need to make population estimates. The author has developed a method that these persons can try out. The statistical technic he employs is justified by his figures and is competently displayed.

The postcensal population of a city can be estimated by the equation:

$$p' = P' \left[0.000011694 + 0.176567 \left(\frac{b'}{B'} - \frac{b}{B} \right) + 0.539863 \left(\frac{e'}{E'} - \frac{e}{E} \right) + \frac{p}{P} \right]$$

when—

- p = the 1950 population of a given city,
- p' = the postcensal population of a given city,
- P = the 1950 population of the United States,
- P' = the postcensal population of the United States,
- b = live births (by place of mother's residence) for a given city in 1950,
- b' = live births (by residence) for the city in the postcensal year,
- B = United States live births in 1950,
- B' = United States live births in the postcensal year,
- e = number of persons in the 7–13 age group in the specified city enrolled in school in 1950,
- e' = number 7–13 in the specified city enrolled in the postcensal year,
- E = United States enrollment for the 7–13 age group in 1950, and
- E' = United States enrollment for the 7–13 age group in the postcensal year.

Data required for the right side of the equation can be obtained from a number of official sources. Population and school enrollment in 1950, both national and local, can be found in the 1950 United States census. Monthly postcensal population estimates at the national level are published by the Bureau of the Census,[1] which also issues annual estimates of United States school enrollment.[2] Local school enrollment is usually available from school authorities, although use of different survey dates, tabulations by grade rather than age, omission of private schools, and failure of school district lines to coincide with city limits are frequently complicating factors. The number of live births in both the nation and each major city is obtainable from annual reports of the National Office of Vital Statistics [3] and the Bureau of the Census.[4]

The equation was based on a multiple regression analysis of 1940–1950 trends for the 50 largest American cities in 1950. These cities comprised all having a population in excess of 200,000. The dependent variable (X_1) was the difference between 1950 and 1940 in share of national population and the independent variables were differences between 1950 and 1940 in, respectively, per cent of all live births in the United States (X_2) and per cent of United States school enrollment in the 7–13 age group (X_3). Thus, for a city which (as in the case of Cincinnati) had 0.346

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per cent of the United States population in 1940 and 0.334 per cent in 1950, the value of X_1 was —0.012. Similar computations were made for X_2 and X_3.

Correlation coefficients were relatively high. The coefficient of multiple correlation ($R_{1.23}$) was 0.974. Between the variables based on population (X_1) and live births (X_2), the zero-order correlation was 0.781 and the partial correlation ($r_{12.3}$) was 0.373. For variables based on population and enrollment (X_3), simple and partial correlations (r_{13} and $r_{13.2}$) were, respectively, 0.970 and 0.933. A possible third independent variable, difference between 1940 and 1950 in share of national deaths, was rejected because of its low and negative correlation with population ratios ($r = -0.262$).

This method is, in part, a combination and refinement of several methods proposed previously. Snow suggested the use of multiple correlation for estimating population as early as 1911, but his application of the technic failed to make allowance for either geographical or secular variations in symptomatic ratios.[5] Bogue's more recent "vital statistics method" avoids this pitfall, but gives equal weight to both birth and death rates as symptomatic data, despite their manifestly unequal value.[6] The "migration and natural increase method" used by the Bureau of the Census[7] is both cumbersome and, at the city level, somewhat inaccurate.[8] The present technic it would appear tends to avoid such difficulties, although proof of its ultimate value must await publication of the 1960 federal census.

Value of this method (which might be termed, for convenience, a "ratio-correlation method") could be further extended by the following means:

1. Equations could be computed for other geographic units, such as states, standard metropolitan areas, counties, and perhaps smaller units. Inasmuch as the present equation was derived from data for cities over 200,000, a different equation might well be calculated for smaller municipalities. Census tracts, likewise, could be analyzed, although the paucity of symptomatic data at this level would lessen the value of the method.

2. Other kinds of symptomatic data—automobile registrations, election data, and similar series—could profitably be used as variables, especially for the larger political units.

The value of postcensal population estimates has been remarked with increasing frequency in recent years by city planners,[9] public health officials,[10] and others in public service fields. The continued evaluation, extension, and refinement of methods such as the one suggested above should, accordingly, be a major interest of demographers in the coming years.

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The Health Department's Responsibility for Providing Nutrition Services to Institutions

RALPH E. DWORK, M.D., M.P.H., F.A.P.H.A.

Slowly gaining in general acceptance is the idea that nutrition must be made an integral and an important part of the total community health program. Considered here is the betterment of the nutriture of one segment of the public—the people under care in institutions—and where the responsibilities for the betterment may lie.

Nutrition, a matter of considerable importance to the health of all people, should receive special attention in institutions. In general hospitals, tuberculosis or mental hospitals, children's or nursing homes, and homes for the aged—all considered as institutions for purposes of this discussion—we have a captive group. Used to eating three meals a day, the patient knows what he likes, knows when he likes to eat it, and considers himself somewhat of an authority on the quality and preparation of food. In a hospital where activity and environment are unfamiliar, and no doubt disturbing or confusing, food is a familiar item to him. The patient's attitude toward the food and its appearance as it is served to him obviously has a direct bearing on his morale and attitude toward the entire institution. His attitude is reflected abroad into the community as he replies to visitors' questions: "They're treating me fine. The food's real good"; or conversely, if he is impelled to report that "The food's terrible. I can't wait to get out of this place." By such remarks he contributes and helps to build or tear down the institution's reputation and status in the community.

Certainly, the hospitalized patient's welfare is our main concern and it is almost unnecessary to remark that, within limits, good nutrition contributes vastly to a patient's physical recovery rate, regardless of his reason for hospitalization. Good nutrition in long-term illness may be a factor which determines whether or not a patient is content to stay until he is medically discharged. In some chronic illnesses, diabetes, for instance, good nutrition information and diet regulation practice during the period of hospitalization are important facets of the patient's treatment.

We have more persons hospitalized today than ever before in our nation's history. In the past few years we have developed greater public awareness of hospital services. More babies are born today and more and more of our infants are delivered in hospitals. We have a greater population among the aging and, for good or bad, more and more aged persons are occupying hospital beds. Some years ago our nation was thought to be reasonably well equipped with hospital beds and with trained personnel—including dietary workers—to serve them. The trend toward hospital deliveries, the lengthening life span, the increased stress of war, the higher economic income levels and the insurance plans which have made hospitalization possible for more people, and the adoption of higher standards of medical care have all contributed to filling our hospitals to the point of overflowing.

As you know, federal legislation of 1946 marked the beginning of a hospital building program which will con-

tinue for some years. Through this program Ohio communities have built 20 new hospitals, made additions to 28 existing hospitals, and constructed nine hospitals to house those that were operating in unsuitable buildings. Thus we have raised our ratio of acceptable hospital beds to 3.13 beds per 1,000 population (in 1952), but are still far short of the recommended goal of 4.5 beds per 1,000 persons.

Ohio has directed her hospital building efforts toward areas of greatest need, i.e., smaller cities and rural areas. Fourteen of our 20 new hospitals are located in relatively small communities, only one of which had formerly had a hospital. However, the availability of trained dietary personnel has not kept pace with the stepped-up hospital building and accelerated occupancy programs. We have in Ohio today 90 general hospitals, 14 tuberculosis hospitals, and 19 mental hospitals which have persons in charge of their food service who are not qualified by training and experience for this type of work. There are also about 140 children's homes and over 600 nursing homes and homes for the aged in Ohio that have inadequately trained dietary personnel.

The trained dietary personnel who are available are attracted by the larger hospitals in the larger cities for they offer better professional associations, higher salaries, and shorter working hours. So we find ourselves thus faced with an expanding hospitalization program creating a greater need for dietary personnel, yet with such personnel unavailable or unattracted to the smaller hospital positions. Indeed, we find some hospital administration unaware of the need for such specially trained personnel.

We in the Ohio Department of Health, frustrating as the problem is to us, do not believe that we are at an impasse. For the past five years now we have been giving nutrition and dietary consultative service to general and tuberculosis hospitals, children's homes, and to a very limited degree, to homes for the aged. Our first entry into this area of service was that of prevention—prevention of costly errors in designing and equipping kitchens of hospitals as their plans for new construction or remodeling came through our hands under the Hill-Burton program. Too often kitchen layout had been done by persons whose experience was out of date or whose skill and knowledge lay in the fields of architecture and engineering rather than food service. The board of one new 75-bed hospital, who had built without such kitchen preplanning, found it necessary to spend during the first year of operation an additional $4,000 to exchange unsuitable kitchen equipment and to rearrange the kitchen and dining areas. This entire expenditure could have been avoided by early review of plans by a competent dietary consultant.

Also, among our earliest efforts at giving dietary consultation to institutions was instruction in food service with the personnel and equipment at hand. Our dietary consultant found that an electric deep-fat fryer had not been used for months because it needed cleaning. After she rolled up her sleeves and cleaned the piece of equipment, she learned that the kitchen workers had fully expected her to be electrocuted while doing the job! In another hospital kitchen our consultant found a vegetable steamer never used until she proceeded to prepare a noon meal with it. Its use had never been demonstrated and the kitchen workers' ignorance and fear of unfamiliar equipment had made them

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wary of it lest it blow up. Simply by teaching a kitchen worker in another institution how to make good coffee every time, our nutrition consultant gained her everlasting gratitude—and that of patients and the entire medical and nursing staff who had had to "drink the stuff."

Why are we concerning ourselves with such nutrition and dietary consultation? Is it outside the province of public health and of the state health agency? We think not. We believe the public health implications of food service in institutions are many. Consider, for example, the opportunities for founding good nutrition practices during a patient's hospital stay—practices which he will carry out into his home, share with his family, and continue for his lifetime. Such assumptions are not unreasonable. A young patient, interviewed by a public health nurse and a nutritionist six months after her discharge from a tuberculosis hospital, gave strong evidence of having gained much nutrition information during her hospital stay which she was now using every day in her meal planning. Two older women, discharged from the same hospital and living in the same community had, upon interview, made no improvement in their poor dietary habits as a result of their hospitalization. This difference was partly due to the latters' poorer educational backgrounds, their older ages, and their longer established habits. But if one young woman gained so much by observation alone, could not a planned program of nutrition teaching accomplish much more and for many more persons?

There is little doubt that good food service in an institution has far-reaching effects in community health. It has the strong, direct influence of teaching by example or demonstration the health value of a well balanced diet, properly prepared, and attractively served. It has equally strong, indirect influence on the harmonious working relationship of institution residents and employees. Good food affects their physical health, their job satisfaction, and their pride in their "company"—the institution. Good food served attractively in institutions is the clue for attending nurses, physicians, or other designated hospital personnel to follow up with instruction and explanation of the necessity of continuing such eating patterns. Patients whose recovery from—or living with—illness is directly dependent upon good nutrition and improved food habits must be convinced by demonstration. Their cooperation and understanding is essential if they are to follow the road to physical recovery.

Predominant in Ohio State Health Department consideration is our service to local health departments and not directly to local communities. It is not necessary to go into our philosophy of working with and through the local departments and giving but sparingly of direct service. However, one of our prime functions as a state health agency is exploring new areas, whether or not called upon to do so by local departments. One such area was that of dietary consultation to institutions. Most local health departments were unaware of the problem in the community or were not staffed by trained nutritionists capable of giving help. Consequently, when Ohio launched its program of dietary consultation to institutions it was on a direct service basis, and so it remains today, but it is becoming increasingly apparent that this attitude should undergo complete revision. We are certainly happy to report that the local departments share this attitude.

We chose our dietary consultants carefully on the basis of training, experience, and personality. We did not want "inspectors," or persons who went only "by the book" and who were unsympathetic to local conditions, personnel, and money. It was necessary to pro-

ceed slowly, carefully, offering service, never forcing it. Several of our people are truly consultants, sometimes offering only a listening ear as the hospital kitchen worker herself speaks about her problems. Sometimes they roll up their sleeves and work right along with the kitchen personnel. They point out what is good, what use can be made of the available facilities, what is poor either in practice or service or in physical arrangement or equipment. No small triumph was it for one of them when on a hospital tour with a local public health nurse and a sanitarian, the local nurse's condemnation of the food preparation and service was completely reversed and she was amazed that any food preparation at all had been possible with the dilapidated equipment and inefficient arrangement. Her newly acquired awareness has been communicated to the rest of the health department staff and to the hospital administration and staff personnel.

Our work in dietary consultation to institutions is, of course, not limited to kitchen planning or layout. Our interest lies also in helping hospital administrators, nurses, and kitchen workers to recognize that dietetics is a professional field, not something to be passed around and divided up and assigned to whomever is not quite as busy as the next fellow. We have been helping local health departments to see this, too, and more and more of them are becoming interested in meeting this need. Local health affairs, we believe, are best carried out on the local scene by local people, backed up, when they are inadequately staffed or trained, by state consultants.

Local health personnel sometimes can give service, but more often than not, they are not staffed to handle such problems and particularly not the out-of-the-ordinary situation. The State Health Department's dietary consultation has proved invaluable in meeting unusual or special situations. Recently, we received a request from the medical director of a tuberculosis hospital for nutrition consultation for a group of patients ready for discharge. These were all males, all without families, all 50 years or more of age, and none of them employable. Their only income would be from relief funds—$8 a week would go for a housekeeping room with a hot plate—but generally without an oven or a refrigerator. A purchase order of $14 would be expected to provide food for two weeks, with the entire amount spent at one time. Of course, it is easy to spend $14 at one time in a food market as we all know, but contemplate buying food that would have to last for two weeks with no refrigeration. Obviously the situation presented enormous problems in the matter of purchasing and storing food and of meeting the special diet requirements of a patient just recovering from a long-term illness. This was a case for very specialized, practical help in food selection for diets requiring additional protein foods, in marketing, in preparing sample menus, and menus that can utilize foods that need no refrigeration or oven baking. The job was done and we as the state agency can remove ourselves, being reasonably sure that the local health department involved in the project, with our help, can now carry on the necessary follow-up adequately and will not hesitate to seek our further assistance.

Local public health people are becoming more alert to the fact that better nutrition for a new mother and her baby can be built on a favorable experience with food during the hospital stay. Such hospital stays are very short and the food served must be attractive and palatable and nutrition education must be telescoped into a very brief experience or interview. Local health department staff nurses can do a great deal by their follow-up visits to these homes to aid the new mother to know and put into prac-

tice good food patterns for her entire family.

Many public health nurses in Ohio's local departments are participating in the rehabilitation of discharged tuberculosis or other chronic disease patients. Too often this follow-up does not include assistance with revision of the patient's original poor dietary habits to which he often automatically reverts when he goes home from the hospital. No amount of demonstration or instruction to the patient while hospitalized would give continuing results if the person responsible in the home for menu planning and meal preparation were not enlightened as well. This is an area where the local health department can provide some of its greatest service.

Many local health departments cannot afford personnel fully trained in nutrition—nor can many of our hospitals. Similarly, hospitals and health departments often do not need the full-time services of such personnel. Several of our hospitals have found their solution to nutrition and dietary problems in the joint hiring of qualified people. Another solution is inservice training of untrained or inexperienced dietary workers. Working under the direction of a trained person such auxiliary personnel function very well and a trained dietitian is released from routine chores. In all our efforts, we consistently involve personnel of the local health departments. One of the accomplishments in our dietary consultation program has been the awakening or recognition of an interest, a responsibility, and a desire by some of our local health departments to meet problems of nutrition in the institutions of their communities.

The Ohio General Assembly last year enacted legislation placing the inspection and licensing of food service operations in local health departments, charging the state health agency with surveying the programs for their adequacy, and for taking steps to bring recalcitrant programs up to a standard. In one year considerable progress has been made in improved food service operations for all public eating places. Soon it will be reasonable to expect more attention to sanitation of food service in institutions, such as hospitals, children's homes, nursing homes, and penal institutions.

Food service operations of nursing homes, homes for the aged, and children's homes are inspected by local health department sanitation personnel in a working arrangement with the State Welfare Department. Local personnel are charged with similar service in tuberculosis hospitals by arrangement with the state health agency. Institutions for which local health departments must assume additional sanitary responsibility are the local, tax-supported homes for the aged and infirm which are not regulated on the state level. Whenever possible, sanitation service in the local jails is provided.

A good program of food service sanitation can do much to aid and improve nutrition in an institution. A sanitarian has much to add to an institution's food program. Adequacy of proper refrigeration alone can determine whether fresh fruits and vegetables can be purchased and prepared for the institution. Refrigeration—or its lack—can vitally affect the nutritional values, flavor, and texture of such foods and can be an important factor in controlling waste of these and other foods. An alert sanitarian can bring out these points most effectively as he makes his visits to the institutions. Sanitarians and nutritionists have found it beneficial to both to exchange such information and to reach solutions acceptable to both. Dishwashing, food storage, advance preparation of foods—these and many other facets of the nutrition and dietary program are mutually benefited by such cooperation.

There are several areas still but

slightly developed or completely untried in our program of dietary consultation to institutions. But we are convinced that we have the responsibility to provide this—and better—consultative service to institutions unable to provide it for themselves. We are convinced that local health departments must reflect and extend this and similar nutrition service, allying it with sanitation to the institutions and the community.

I should like to sum up by saying that institutions in Ohio frequently need help with their nutrition problems and local health departments cannot always provide it. State consultation is therefore made available in preplanning of kitchen layout, in teaching best use of equipment, in menu planning, in food purchasing, in preparation and serving, in control of waste, and in control of costs. Special problems also are referred to the state. Local health departments help jointly with training, demonstration, and instruction of individuals or groups of patients. Sanitation wherever possible is a local responsibility. Cooperation between state and local health agencies can help meet the responsibility for providing nutrition services to institutions.

New Jersey Conference on Epilepsy

"Proceedings of the Governor's Conference on Epilepsy" constitutes the September, 1954, issue of Public Health News, the publication of the New Jersey Department of Health. This conference, held the previous April, was the sixth in a series of governor's conferences arranged by the State Department of Health to deal with some aspect of chronic illness. Among the conference's addresses was one on "The Challenge of Epilepsy" by William G. Lennox, M.D., a 1951 APHA Lasker award winner for his work on epilepsy, another on "Social Aspects in the Care of the Epileptic Child" by Elizabeth P. Rice, associate professor of social work in public health, Harvard University School of Public Health. In the keynote address, Daniel Bergsma, M.D., state health officer, indicated that there are approximately 20,000 persons in New Jersey with epilepsy or convulsive disorders.

Principles in a Hospital Consultation Service

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Discussed here are some principles applicable to hospital consultation activities, developed out of the experience of the authors over a period of nine years of work in a large urban area. The material is timely in view of the broad implications of the purposes of, and the need for, consultative programs evolving from the use of tax funds used to purchase hospital care for certain groups.

Although one of the functions of official public health agencies traditionally has been standard setting and standard raising, hospital consultation in its broad sense has played a relatively minor role in general public health programs. Our experience has indicated that there is a need for greater development in this area. A hospital consultation program is a service provided to hospitals to assist them in improving the quality of patient care, in promoting continuity of the care of the patient between the hospital and the patient's home, and in introducing public health measures. It is not solely a review of the management and care of hospital patients or of the available facilities and equipment, but also includes the relationship of the patients' therapy in the hospital to medical aftercare and a consideration of social, community, and home factors.

From the public health point of view consultation to hospitals may assist in the reduction of mortality, in the control and prevention of outbreaks of infection, in the supervision of legal requirements of good patient care, and in the prevention of overhospitalization of those patients for whom hospital care is being purchased thereby curtailing the wastage of tax funds. Medically the caliber of patient care may be raised through hospital consultation by setting standards for patient care and by bringing recommendations and experiences of many hospital surveys to individual institutions or specialty services. Public health agencies offering hospital consultation attempt to consider the patient's medical and health needs, as well as his relationship to his family and to society. By review of all of the medical and ancillary services concerned, the total care of the patient is held paramount, and attempts are made to promote continuity between hospital treatment and follow-up care at home.

A hospital consultation service may be most effectively carried on by a team of experts representing the various disciplines or specialties concerned with the broad aspects of patient care. While surveys may possibly be carried on by a variety of groups that are reasonably representative in a community, it may be questioned whether standard raising can be effected through many community groups. In order for any community group to be effective in standard raising, certain requisites are essential. The group must be completely impartial and objective and should not have a specific protective or vested interest. The community group engaged in hospital consultation should have some prestige from which specific suggestions and recommendations, when made, will carry some weight and have a desired effect or end result. In our experience,

this service can be effectively rendered by a team of experts on the staff of a health department.

Historically, hospital consultation in its narrow sense began because of the need for public health measures to prevent and control communicable diseases. Thus, when an outbreak of certain communicable diseases occurred in a hospital, public health authorities would immediately dispatch an epidemiologist for epidemiologic study, for the institution of certain control measures to limit further dissemination of the disease, and in some instances to prevent reoccurrences. In the maternal and child health fields, this activity has particularly applied to outbreaks of infection in hospital newborn nurseries.

The second major step in hospital consultation occurred with the advent of the Federal Emergency Maternity and Infant Care Program (EMIC) in operation from 1943 to 1949. In this program, which purchased hospital care for mothers and infants, standards for such care were established by some official health agencies and hospital consultation activities were carried on a somewhat broader basis. As an outgrowth of the EMIC program some health departments initiated more extensive programs for mothers and newborn infants, including those infants born prematurely. Experience over a period of years has demonstrated that this type of activity has been of considerable value in the conservation of human lives and in the improvement of patient care.

The third type of activity occurred with the passage of the Federal Hospital Survey and Construction Act in 1947, when federal funds were made available to the states for hospital planning and construction. In most states, laws were enacted and standards established at least for those hospitals which received federal funds. An as outgrowth, many state health departments initiated hospital consultation programs.

Principles of Hospital Consultation

The principles to be presented and discussed are: (1) coordination of agencies; (2) establishment of standards for patient care; (3) consultation by a multidisciplined team; (4) the "consulting team" attitude; (5) development of methods of consultation; (6) promotion of better community planning; and (7) consideration of legal authority and financial assistance.

Coordination of Agencies—While in many areas of the country hospital consultation activities are usually carried on by only one agency, in some regions several organizations are concerned. In New York City, there are four official city agencies, two official state agencies, and one local voluntary agency, in addition to the national accrediting agencies. In the New York City Department of Health alone there are four separate units carrying on some type of activity in the hospital consultation field. If the individual hospital is to survive and benefit from this barrage of consultants, it is obvious that the various agencies and units concerned must be coordinated. Ideally, they should be integrated into one unit of one agency. If there is more than one agency involved, coordination should be a method of action involving a cooperative effort and sharing activities, information, and reports. If it is limited to a mere theory, the effect of the individual consultations and recommendations upon the individual institution may be chaotic.

Establishment of Standards for Patient Care—A hospital consultation program to be truly effective in improving the level of patient care must have a base line guide of standards. Wherever possible, the same set of standards should be used by all of the agencies in any one community concerned with hospital con-

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sultation and concerned with the purchase of hospital care. Unless the same standards are adopted, agencies may make different recommendations on the same subject to an individual institution with the resultant unnecessary confusion, as well as wastage and unwise expenditure of community funds. All the agencies concerned should participate in the development of standards of care. The various specialists and professional groups should play an active role and be well represented by the community experts in the field. To illustrate, in the development of standards of hospital care of children with orthopedic handicaps, representation should be drawn from the fields of orthopedic surgery, pediatrics, physical medicine and rehabilitation, nursing (both hospital and public health), physical, occupational and speech therapy, social work, vocational rehabilitation, education, psychology, psychiatry, and hospital administration. An advisory committee which is truly representative of the experts in the various fields concerned has been found invaluable.

The hospital standards should place major emphasis on (1) the existence or appointment of qualified directors and staffs (both medical and ancillary) of the services concerned, and (2) the policies and procedures of the hospitals with inclusion of specifications for physical plant and equipment (Table 1). Many of the standards developed throughout the country have overemphasized the provision of an adequate physical plant and have underemphasized the provision of adequate and well trained personnel. One of the knotty and unsolved problems in standards for all types of hospital patients is the lack of definite information about nursing needs, especially in two areas, namely, the amount of nursing care required per patient and the desirable proportion of registered professional nurses to auxiliary personnel. The need for authentic information and well planned studies is urgent, whether it applies to the orthopedically handicapped child, the premature infant, or to the poliomyelitis patient requiring care in a respirator.

Table 1—Contents of Standards * Recommended for the Hospital Care of Children with Orthopedic Handicaps [1]

1. Definition
2. Medical Staff and Policies
3. Nursing Staff
4. Department of Physical Medicine
5. Nutrition Department
6. Laboratory Department
7. X-ray Department
8. Anesthesia Department
9. Social Service
10. Educational Program
11. Service for Psychological Testing
12. Physical Plant
13. Policies and Procedures
14. Records
15. Visiting Hours
16. Arrangement with Community Public Health Nursing Agencies
17. Convalescent Care
18. Referral for Vocational Counseling
19. Employee Health Policies
20. Outpatient Department

* This set of standards recommended for the hospital care of children with orthopedic handicaps has been developed by the Bureau for Handicapped Children of the New York City Department of Health with the assistance of its Orthopedic Advisory Committee. These standards are circulated to all hospitals participating in the medical rehabilitation payment program for the care of orthopedically handicapped children, or those requesting participation. They are used as a basic guide to the hospital, to the consulting team, and the advisory committee in the consideration of approval or disapproval of a hospital in the program.

The fact that a set of standards has been developed should not be accepted as the complete and final answer. As clinical practice changes, and as the hospital consultants and hospital staffs acquire further knowledge and understanding, periodic revision of established standards is indicated. Too often, the established standards belong to a vintage and era which have become outdated and outmoded.

Consultation by a Multidiscipline Team—Consultation in its broad aspects can be maximally effective only if it is conducted by a team of technical specialists in all of the fields concerned. Thus, in a consultation program designed to improve the level of hospital care for children with orthopedic handicaps, the core of the team should include an orthopedic surgeon, a specialist in physical medicine and rehabilitation, a pediatrician, a nurse, and a social worker, with ancillary consultants being readily available for specialized assistance when needed—for example, nutrition, physical therapy, etc. The use of the team method serves several necessary functions: (1) the professional members of the team are all present to evaluate patient care from the viewpoint of their own specialized training and technical skills; (2) the team members may more easily and readily learn from each other and so broaden and improve their own understanding of total patient care; (3) at the time of the conference with the hospital staff after the survey, there is better interpretation by the consulting team members to the hospital staff of the recommendations made particularly in the various specialized and technical areas; and (4) the team members working together serve as an illustration to the hospital staff members of the different departments as to how they may themselves work together on common problems. This last point is best illustrated by an example from our consultation experience in the maternity and newborn field. In the early days of that program there was rivalry and competition as to medical responsibility for the care of the newborn baby, who in fact became "nobody's baby." Because the consulting obstetrician and pediatrician demonstrated their respective areas of responsibility at the surveys and subsequent hospital conferences, the hospital staffs were also better able to define their responsibilities in respect to the newborn nursery services. Their assignment of the newborn service to the pediatric staff then evolved quite amicably.

The "Consulting Team" Attitude—Basically the attitudes of the members of the consulting team set the tone for the hospital consultation program and probably represent one of the most important factors determining the success or failure of the program. If the consulting team members are helpful, fair, courteous, practical, and cooperative, and if they are technically skilled in their respective specialties, there is usually good rapport with the hospital staff. On the first contact the consulting team must convince the hospital staff that the purpose of the survey is to assist them in improving their services and the care of the patients. To many hospitals and hospital staff members hospital consultation from a public health agency is something new and something to be feared. The methods and purposes must be carefully explained so that the staff will recognize that the recommendations made following the survey are not in the sense of criticism of the services, but are suggestions based on a large number of surveys of similar institutions, as well as on accepted standards of good patient care.

It is essential that the hospital staff members feel that the consulting team is anxious and ready to assist them in every way possible in solving their problems and in fulfilling the recommendations that are made. For example, a survey was made in a 50-bed children's orthopedic service in a 2,200-bed general hospital. There was no closely knit service for the children with orthopedic handicaps in that these beds were scattered in four separate floors and wings, among pediatrics, dermatology, general surgery, chest surgery, and neurology. The difficulty of the attending orthopedic staff in making daily ward rounds and in giving daily supervision was obvious. The director of the ortho-

pedic surgical service was asked by one of the members of the consulting team if it might not be easier for him and his staff if there were a definite section of the hospital allocated to the children's orthopedic service. His quick reply was that he had been trying to accomplish this for several years without success. He was asked whether it would help if we made such a recommendation with suggestions as to how it might be accomplished. When he recognized that our purpose was to assist him in improving his service and not to criticize, the survey proceeded very smoothly and effectively with the maximum cooperation of the hospital staff.

Development of Methods of Consultation—Essentially a hospital consultation program has several specific components: (1) the survey; (2) the preparation and sending of a letter of recommendations; (3) the postsurvey conference at the hospital; and (4) follow-up activities depending on the individual need.

The survey is made on an appointment basis only, and usually from two to four weeks elapse between the time the appointment is made and the date of the survey. This is an essential principle in the preservation of a good working relationship with the institution and there is no reason or need to take the institution by surprise. An experienced hospital consultant will be able to observe innumerable areas requiring improvement in patient care even in the "best prepared" hospital. The hospital should be informed as to the personnel of the consulting team and be requested to have present the director of the hospital or his representative and the directors of the medical services being surveyed, in addition to all ancillary services (nursing, social service, physical and occupational therapy). The length of time necessary for the survey depends to a great extent upon the size of the hospital and its problems. The minimum time necessary in the average large hospital is one full day if there is to be observation of patient care, physical setup, and ancillary services (operating room, laboratories, x-ray, blood bank, physical and occupational therapy) and a review made of staff qualifications, charts and records, and policies and procedures. If the service being reviewed has an outpatient department, at least another half day is required to review this activity.

Following the survey, one member of the consulting team is assigned responsibility for writing the report and for drafting the letter of recommendations to be sent to the hospital. The report and the letter are written with the team members who have made the survey and agreed upon recommendations are drawn up. The final letter of recommendations is sent to the hospital administrator, the medical directors of the services concerned, the director of nursing service, and the director of the social service department. If the hospital consultation is part of an ongoing program and the survey represents a periodic visit where no major deficiencies in patient care are noted, the team itself usually assumes full responsibility for the recommendations. If the institution is new to the program, or if special problems have arisen since the last survey, the team may then ask its advisory committee for assistance. In general, major policies and decisions are brought to the advisory committee for guidance and assistance.

Usually a period of several months elapses between the sending of the letter of recommendations and the postsurvey conference at the hospital. The reason is to enable the key staff members of the hospital to review the recommendations and to get together among themselves to discuss them. The conference is held at the hospital by the survey team with the key hospital personnel, although frequently medical residents and supervis-

ing and head nurses are invited by their directors. The conference consists of a review of the finding and recommendations with a considerable amount of discussion. The hospital staff is again informed that the recommendations are not criticisms of the hospital policies and practices, but an attempt to assist them with improvement in patient care. The conference usually lasts a half day. In many of the better institutions, a good proportion of the recommendations have already been carried out by the time the conference is held, and the conference time is spent in discussing those recommendations in which the hospital staffs may need the assistance and further interpretation by the team.

Follow-up activities depend to a great extent on the needs of the individual institution. The following partial list of cooperative efforts is self-descriptive: assisting the director of nursing service in replanning the nursing service; assisting in securing additional training for medical and nursing personnel; assisting the administrator of the hospital in reorganization of the social service department; reviewing policies and manuals developed by the hospital staff; sending materials prepared by the health department to the hospital staff (standards, manuals, description of procedures); suggesting the names of institutions with desirable features in the same geographical area which the hospital staff might visit; reviewing blueprints; discussing revamping of the medical intern and resident training program; presentation of materials and discussions at the hospital's medical and nursing staff conferences; and assistance with the organization of the outpatient service with special reference to coordination of inpatient and follow-up care.

Promotion of Better Community Planning—Over and above the use of the hospital consultation program for the improvement of the care of the patient in the individual hospital is another equally important function of the program, namely, better community planning. A few examples will illustrate this function. Surveys of maternity and newborn services in New York City revealed substandard care of premature infants in many hospitals. From these surveys the concept of premature centers evolved and steps were taken to assist in the development of such centers. Preliminary surveys indicate that there is more than an adequate number of hospital beds for children with orthopedic and cardiac handicaps. This oversupply is probably related to postwar expansion of services and to the decrease in such orthopedic defects as osteomyelitis, rickets, and tuberculosis of bone and joint on the one hand, and to some decrease in rheumatic fever and rheumatic heart disease due to the use of antibiotics and sulfa drugs on the other. Thus, emphasis in the orthopedic and cardiac programs should be in the consolidation of existing services many of which are considerably deficient in essential details. Preliminary surveys also indicate a dearth of complete services for the total rehabilitation of children with speech and hearing impairment, cleft palate, and epilepsy. A hospital consultation program should be able to stimulate the development of new services to fill currently unmet needs and to discourage the overprovision of services the need for which are already met quantitatively in the community. In this way the available resources and funds can best be used for the benefit of a larger number of patients in the community.

Consideration of Legal Authority and Financial Assistance—Frequently, several questions relating to this have been raised with us: "Do you need legal authority in order to develop a hospital consultation program?" "Does legal authority seriously interfere with an effective educational hospital consultation program?" "Is payment for hos-

pital care necessary for a hospital consultation program?" The authors have participated to date in five types of activities in the hospital consultation field in which the questions of legal authority and payment for care have varied. In three programs there has been payment for care, but no legal authority for enforcing standards. In the fourth program there was complete legal authority, and in the fifth program partial legal authority for enforcing standards; neither of these last two programs paid for hospital care.

Based upon these five types of experiences, it is our opinion that in the case of institutions of moderate-to-high caliber with a good staff interested in the improvement of patient care, the institution welcomes the consulting team and productive surveys and conferences are usually the rule without the need for legal authority. In the case of institutions of low caliber legal authority is necessary. This type of hospital has, with a few exceptions, taken the position that they will institute only those changes required by law. In essence, if patient care were rendered only by institutions truly performing a community service, legal authority for a hospital consultation program probably would not be necessary.

In regard to the question "Does the fact that there are legally required standards for hospital care interefere with the development of a truly effective educational hospital consultation program?", the answer will depend to a great extent upon the attitude and efficiency of members of the consultation team as was discussed earlier. Standards required by law are usually minimum standards and a small percentage of hospitals in a community will by themselves provide care of a caliber higher than that required by law. In a considerable percentage of community hospitals, the staff will be interested in improving patient care beyond the level of minimum legal requirements. If legal requirements are administered with reason and understanding, the participating institutions can usually be encouraged to improve their services by an effective educational program, both at the time of hospital surveys and conferences, and by other types of educational activities in the community.

Payment is certainly a factor in the success or failure of a hospital consultation program with several types of qualifying limitations. Ideally, payment should be on a cost basis. The "paperwork" in the payment program should be kept as simple as possible and bills should be paid promptly. If these conditions can be met, there is no question that the payment factor will make it easier for the program to succeed more quickly since surveys and recommendations can carry with them the responsibility to administer the payment for patient care. This is particularly true in the New York City program for prematurely born infants, where there was a dearth of good services at the beginning of the program. On the other hand, a hospital consultation program can succeed without payment (as in the case of the New York City maternity and newborn program), but it will undoubtedly take longer to do since it will depend more upon the integrity of the hospital staff in its desire to improve patient care. In addition to financial assistance offered to institutions under a payment program, hospitals are eager to meet standards and participate because once they are on the approved list, physicians, social and health agencies refer cases to them resulting in enlargement and improvement of the respective medical services. If a public health program includes payment for patient care, concomitant steps should be taken to evaluate and periodically to re-evaluate the quality of this care being purchased and to assume financial responsibility only if it meets the estab-

lished standards. If these concomitant steps are not taken, it is likely that public funds may be wasted and patients may receive substandard care.

Summary

Hospital consultation has played a relatively minor role in many public health programs throughout the country. It is suggested that expansion of hospital consultation services will assist hospitals in improvement in patient care and will assist official public health agencies in fulfilling their responsibilities in the areas of standard setting and standard raising, and in the optimum utilization of tax funds in the purchase of hospital care for patients.

REFERENCE

1. Bureau for Handicapped Children, New York City Department of Health. Standards Recommended for the Hospital Care of Children with Orthopedic Handicaps, 1952, 11 pp.

Another Regional Education Compact

Congress has passed and the President has signed a bill (S. 3726) which authorizes the six New England states to establish the New England Board of Higher Education. The purpose of such a board is stated to be "to provide greater educational opportunities and services through the establishment and maintenance of a coordinated educational program . . . with the aim of furthering higher education in the fields of medicine, dentistry, veterinary medicine, public health, and in professional, technical, scientific, and other literary fields." The compact becomes effective for those states executing it as soon as two or more of the six states have accepted it.

The plan is that the compacting states will cooperate in providing higher educational facilities for their citizens without the necessity for each state to set up its own schools. For example, only Connecticut and Massachusetts presently have schools of medicine and of public health and in neither state are they state schools.

Earlier examples of this type of regional cooperation in education are to be found in the Southern Regional Education Board initiated in 1948 by 14 states without federal legislative action and the Western Interstate Commission for Higher Education created by authorization of Congress in 1953 and applying to 11 states, Alaska, and Hawaii. (See A.J.P.H. 43, 6:773 (June), 1953).

Can We Determine the Cost of Collegiate Nursing Education?

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Public health departments and visiting nurse associations play highly important roles as teaching associates in collegiate nursing education. They are also the beneficiaries of the effort to increase the numbers of college trained nurses. Hence, this inquiry into educational costs will hold much of interest to both the official and voluntary agencies.

A knowledge of costs in education, as in industry, has always been fundamental to sound administration. In our teaching institutions, however, cost figures have not been considered as essential to administration as in the industrial world. In the past colleges have had greater access to philanthropic funds and fewer students to serve. Today, that picture has changed. Educational costs are higher and the availability of large gifts for educational purposes is limited. It is imperative that each dollar be spent wisely.

What applies to all higher education is equally true of collegiate nursing education programs. At present, no one knows what the educational investment in nursing really is or what it should be. That there is need for exchange of information about costs is evidenced by the frequent and increasing number of requests received by both the National League for Nursing and the Public Health Service for assistance in cost analysis and for the establishment of a more or less standard method of cost determination applicable to the university and to the organizations associated with it. Research in this area demands a high priority. The why of this urgency is better understood as we think for a moment about the pressures now placed on our institutions of higher learning to graduate more nurses with a baccalaureate degree. An increased supply of nurses with this preparation is basic to overcoming shortages in public health nursing, teaching, administration, and several other areas in the profession. Currently, only 8 per cent of our active professional nurses have this type of preparation. The profession estimates its needs at 25 per cent.

The pressures for more college trained nurses come at a time when the difficulties of financing higher education are increasing. They come at a time when considerable thought and action are directed toward altering educational programs to meet the rapidly changing content and responsibilities of the nursing profession. It is no wonder that boards of trustees, benefactors, college and university administrators, and hospital authorities are increasingly raising the question of cost in what is considered by some to be a relatively expensive educational program. The problem can be translated into a series of questions, answers to which are essential to a university before expansion of facilities and appropriate changes in curriculum can be readily accomplished:

What portion of the university expenditures for administration, plant operation, and other general services might appropriately be charged to nursing education?

What portion of the expenditures for the arts and sciences and other instruc-

tional units might be allocated as part of nursing education costs?

What is the monetary value of the contributions of the associated hospitals, the public health agency, and other organizations which participate in collegiate nursing education?

To what extent does the faculty of the school of nursing contribute to direct patient care, to other hospital functions, and to community service; what is the cost of this contribution?

What is the cost per student? And what part of student cost is covered by tuition, student service, and other income?

When methods for answering these questions have been developed, to what extent can data from existing schools help in estimating the cost of establishing new collegiate programs?

To date, there has been little analysis of the cost problems peculiar to college or university schools of nursing. Few schools, indeed, are able to answer the series of questions just listed. Methods developed thus far for analyzing nursing education costs are useful primarily to hospital schools and for the most part have been limited to analyzing the financial data of the parent institution. Cooperating agencies have not been taken into account in these methods. Much has been accomplished in developing accounting and cost analysis procedures for colleges and universities but here, again, consideration has not been given to the total, complex relationships between the school of nursing and its clinical or field facilities. Schools of nursing are among the special problems because of the several kinds of organizations utilized in the course of instruction, the rather complicated exchange of services between them, and the variety of nursing education programs offered within an institution.

In view of the mounting concern over these special problems the National League for Nursing attempted to find a solution when in 1952 it appointed a Working Committee, chaired by Agnes Gelinas, chairman of the Department of Nursing of Skidmore College, to study ways and means of determining the cost of collegiate nursing education and of financing it. A similar study had been planned by the Public Health Service for some time, and in 1953 it accepted an invitation to participate with the league in a cooperative study and to provide a staff for carrying out the project. The two organizations with the advice of the Working Committee agreed on the following objectives: (1) To study possible methods for determining the cost of basic collegiate nursing education in the university, including the hospital, the public health agency, and other participating groups; and (2) to prepare a manual describing a practical method of analysis by which the schools of nursing and their associated agencies could obtain firsthand knowledge of direct and indirect costs.

As a first step, the staff made brief visits to a number of collegiate schools and their clinical facilities to gather information on the scope and nature of the problems to be considered. To gain further insight on method, the staff actually carried out a pilot study of costs in one collegiate school of nursing and its five associated agencies at the close of the 1952–1953 academic year.

In September, 1953, the results of

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This paper was presented before the Public Health Nursing Section of the American Public Health Association at the Eighty-second Annual Meeting in Buffalo, N. Y., October 13, 1954.

these experiences and recommendations for continuing the study were presented to the Working Committee and subsequently to an Advisory Committee. The latter, appointed by the league, includes representative national leaders in the fields of higher education, hospital administration, medicine, and the area of business and finance relating to the problem. Among major decisions reached during discussions with these groups were the following:

1. That a limited number of collegiate schools offering various types of nursing education be invited to participate in the project by carrying out cost studies of their basic programs.

2. That the same schools be invited to send to a central meeting key persons representing their nursing faculty, the chief clinical facilities, and the university or college business administration to discuss and revise as necessary tentative approaches to cost determination as developed by the study staff.

3. That the project be placed on a current basis so that during the fiscal year under study the schools would have an opportunity to collect certain statistical data on which the proper allocation of certain costs could be based at the end of the fiscal year.

It was understood that any method tried in a limited group of schools would require additional testing in a much larger number of collegiate programs before its general applicability could be assured.

On the basis of these decisions, the staff intensified its efforts to develop cost analysis procedures and trial work sheets that could be utilized by the large complex university or the small college, by the hospital within the university structure, or one completely independent of it. Fortunately, procedures for determining the cost of nursing education in public health agencies had already been established by NOPHN and were incorporated as part of the tentative method.

Simultaneously, the league extended invitations to five colleges and universities to participate in a conference held in November, 1953, at Loretto Heights College in Denver to consider proposed methods developed by the staff. Delegates from the five schools included the deans of the schools of nursing, hospital administrators, and directors of nursing services of the chief associated hospitals, the business managers of the colleges and universities, and a few members of the Advisory Committee.

Conference discussions in Denver led to the conclusion that the tentative procedures and trial work sheets with revisions as suggested during the meeting were sufficiently sound and practical to merit trial runs during the remainder of the fiscal year 1953–1954. This conclusion was not reached without the expression of some concern. Several delegates raised the possibility of disturbing financial relationships of the schools with their parent universities and more particularly with cooperating agencies. Discussions on this point emphasized that cost analysis is a management tool with which the university and the school can determine whether a program is costing too much or too little, and why. It can also help to place the proper values on the exchange of services between the schools and the cooperating agencies. In some instances this may mean a loss to the school and in others a gain. The consensus, however, was that the school of nursing should be prepared to assume the calculated risk of having to defend its cost in the interest of sound administration. Costs which cannot be properly defended indicate the need for some adjustment in the educational program.

Others expressed concern over the possible dangers of comparing costs as reported by schools participating in the

study. The necessity of examining carefully the differences in program content, teaching methods, their effect upon costs and other pertinent factors before making any financial comparisons was clearly acknowledged. It was emphasized that development of method rather than cost comparison was the primary objective of this project. Cost data submitted for study would be regarded as school property and any comparisons would be matters for schools to arrange between themselves.

Despite the expression of these and other concerns, four schools had by January, 1954, arranged with their parent institutions to initiate the cost study procedures. Two additional schools indicated their desire to apply the procedures to their situations, thus increasing the total participating schools to six.* Associated with these schools are 28 general and special hospitals and 17 public health agencies which are participating in the development of cost figures. Consultation has been provided by the staff in the form of personal visits on several occasions and through continued correspondence. The assistance of PHS Regional Offices and consulting members of the Advisory Committee have contributed materially to the solution of some of the more complex problems. The participating schools and their associated agencies are providing excellent cooperation in testing the procedures and in revising principles and methods in the light of their experience.

At the present time, with the closing of college and university accounts for the academic year, the schools are in the process of completing the trial work sheets leading to the determination of cost. The validity of these data, the extent to which they are acceptable to the school, the university, the hospital, and other cooperating agencies, in short, the soundness of the method, will be the subject of a second conference of the deans and their associates to be held in December of this year in Chicago. The findings will be presented to the Working and Advisory Committees for further discussion. The league and the Public Health Service will look to these several conferences as the source of practical advice and suggestions for the development of a manual on cost analysis for collegiate schools of nursing. The hope is that such a manual will be ready for use in a large number of collegiate schools by the fall of 1955.

With this explanation of background and objectives we are better prepared to understand the tentative procedures which give some idea of the approach to the problem. First, let us recognize that cost analysis is not a painless process and, further, it is not an exact science. It involves an appreciable amount of judgment and rather painstaking record maintenance by faculty members, administrators, and nursing staff. Any one of three generally recognized methods, as described by Pressler [1] can be used to analyze cost. Regardless of the one selected, it is necessary to develop appropriate bases for distributing equitably certain overhead or indirect expenditures among the university's instructional departments, of which the school of nursing is only one, and among the activities within the hospital in which collegiate nursing education is a relatively small but significant item of expense. After a review of pertinent literature and with the advice of consultant members of the Advisory Committee, the study staff tentatively selected those general methods and devised those procedures which it believed most practical for developing answers to the questions set forth in the introduction. While the procedure may sound complicated, it was kept as simple as possible.

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* The University of Colorado, Emory University, Loretto Heights College, Skidmore College, Syracuse University, and the University of Washington.

Figure 1

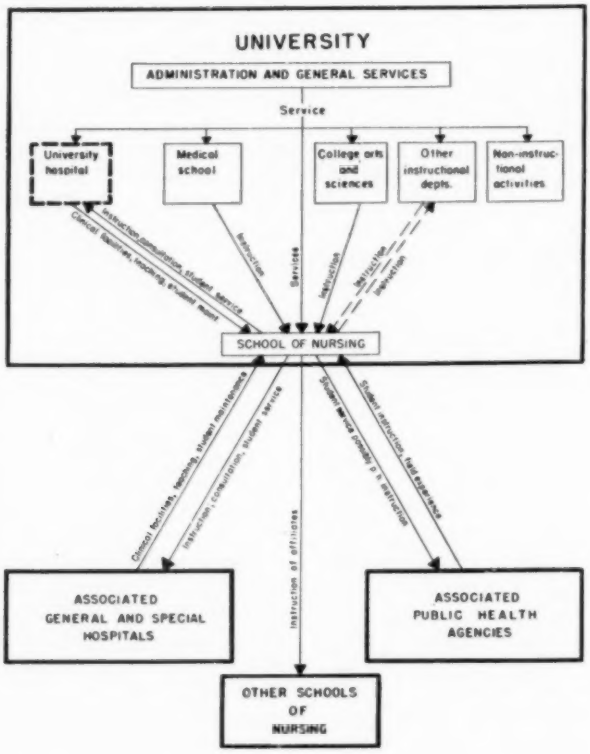

Figure 1 illustrates typically the place of a school of nursing in a university setting and the exchange of services between it and other units within and outside the university. Administrative and a number of general services—for example, plant maintenance, library and registrar—are shared by all instructional departments and to some extent by other units. The college of arts and sciences and other departments may contribute to the nursing education program by providing instruction in the basic sciences and the liberal arts. The medical school may provide additional instruction in both the preclinical and professional portions of the curriculum. The school of nursing in turn may be responsible for teaching students registered in other departments, e.g., dietitians enrolled in the home economics program.

The university hospital, which differs from outside associated hospitals in that it shares in the university's overhead expense, provides the clinical experience, some teaching by staff nurses, and student maintenance. In return the nursing staff benefits from the services of students and their clinical instructors. The hospital may also receive a number of benefits from the faculty in the form of inservice training of hospital personnel and consultation on nursing problems. Similar relationships exist between the school and associated hospitals

and public health agencies outside the university.

The "trick" is to find the dollar value of each of these numerous services and to compare the various costs with the several types of income for educational purposes. It can be readily seen that a cost analysis for the school of nursing alone would give us only a part of the answer. In one preliminary study it was found that the school expenditures reflected less than a third of the total gross expenditures for its basic program. General overhead and liberal arts instruction amounted to 20 per cent while the remaining 50 per cent represented expenditures in three associated agencies. These are only preliminary findings; they are not final data by any means, but they do give some idea of the possible distribution of expenditures for nursing education.

The tentative procedures now on trial in the participating schools incorporate a variety of bases for determining the monetary value of the services exchanged. General university administrative and institutional expense are prorated to the schools and other departments in relation to the direct expenditure of each. Physical plant expense is distributed in accordance with the square footage of space utilized by various programs. Library usage and student head count form the bases for distributing, respectively, expenditures for library and for student services such as the registrar, dean of students, etc. Instructional services may be allocated in accordance with student credit hours, student weeks in training or instructional time, whichever is most applicable to evaluating the particular service.

The analysis of hospital expenditures is based on methods which in many instances are similar to those used in the university. The difficult problem here, however, is the evaluation of student service—a by-product of student clinical experience. There is no fixed, average value of student service that can be applied universally. The value is subject to a number of variables such as the continuity of student service, the patient census and acuity of illness, the availability of staff nurses, the teaching methods, just to mention a few. In this study preliminary findings indicate that student value in a single unit may vary from nothing to approximately that of a staff nurse. The concept of student value may also include intangible benefits, for example, improved quality of patient care, improved morale, and keeping staff nurses "on their toes." These are not easily measured in monetary terms.

The method of deriving student value utilized in the current study is a modification of one described by Block [2] as applied to hospital schools of nursing. Briefly, the modified version in principle provides for estimating on each of a series of sample days the hours of various kinds of nursing personnel that would be needed to replace student nurses if their services had not been available. These estimates reflect the joint decision of the clinical instructor and head nurse on each nursing unit and are based on assumptions and standards prepared in advance by the hospital and school. While the procedure from school to school varies to some extent, the fundamental principle is the same and it is hoped that repeated sampling and extensive experience gained in the course of this study will lead to the improvement of this technic.

One other major associate of the collegiate nursing education program is the local health department and the visiting nurse service. Let us review for a moment the role of these agencies in the educational programs. In 1949 the NOPHN Subcommittee on Function outlined the responsibilities of public health nursing in a community health program Cooperating with the schools of nursing and universities in providing and pre-

paring qualified faculty and participating in plans to provide field practice for student nurses are among the major responsibilities included in this statement.[3] Later in 1950 the NOPHN Education Committee strongly recommended that in providing supervised field instruction for students, public health agencies give high priority to collegiate nursing education programs, particularly those approved by the National Nursing Accrediting Service for the preparation of nurses for beginning public health positions.[4] These statements reflect the importance of public health agencies to collegiate nursing education; they may also be regarded as recognition of the fact that increasing the supply of college trained nurses is the best solution to meeting the expanding and changing functions of community nursing service.

This is the solution, but what of the cost? As Ruth Hubbard points out, whether the expense is defrayed by student service and university funds may mean less to an agency than a readiness to acknowledge that sound clinical experience and theoretical preparation cost money.[5] Knowledge of educational costs is just as necessary to the sound administration of the public health agency as it is to the collegiate school of nursing.

Ever since the 1920's, the public health nursing services have been interested in the development and improvement of cost analysis methods. The most recent manuals on this subject, Cost Analysis for Public Health Nursing Services and its Supplement,[6, 7] were developed by NOPHN and provide the means for determining the cost of services, including student nurse education. Here, then, is a readily available administrative tool, the values of which have been demonstrated in well over a hundred agencies. The method is flexible enough to be applicable to all types of agencies and all types of situations involving student field experience.

Application of the method to public health nursing services will show how well the expenditure of money and professional time compare with major service goals. It will enable the agency to prepare a more intelligent budget. It will provide a more realistic basis for setting up a schedule of charges for services. It will meet the need for information on expenditures for student education and the monetary value of student services. It will promote the wise expenditure of agency funds and, where students are involved, will simultaneously assist the universities as well as the agencies to arrive at a better understanding of the costs of collegiate nursing education.

In summary, this discussion has emphasized the urgent need for an acceptable method of analyzing the costs of nursing education as an indirect means of expanding and strengthening the administration of collegiate programs. Meeting this challenge is now the objective of a joint study of the National League for Nursing and the Public Health Service in cooperation with six colleges and universities and their associated clinical facilities. A brief explanation of the scope and nature of the cost problem and the tentative approach to its solution have been presented. Cost analysis as applied to public health nursing agencies and their relationships with collegiate programs have been reviewed. Finally, in reply to the question which forms the title of this article, Can We Determine the Cost of Collegiate Nursing Education?, the answer is yet to be determined. It is believed, however, that a reasonably sound method is emerging and the indications are that it will achieve its purpose.

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Indian Medical Service to Public Health Service

President Eisenhower, on August 5, signed the bill (HR 303) passed by both houses of Congress, transferring the Indian health services from the Bureau of Indian Affairs of the Department of the Interior to the U. S. Department of Health, Education, and Welfare, where they will be the responsibility of the Public Health Service. The transfer is to be effected by July 1, 1955. In the meantime, a joint committee of the two departments is working out a plan for carrying out the transfer in an orderly fashion. General welfare and education services for Indians eligible for federal aid will remain in the Bureau of Indian Affairs.

The bureau presently administers 58 hospitals with nearly 4,000 beds, 15 health centers for outpatient services, and one public health unit each on the Navajo and Pima-Papago reservations. Beneficiaries of the Indian Bureau are reported to be residing in 47 states and Alaska; in 11 states the number exceeds 10,000.

Erythema Infectiosum: Report on a Familial Outbreak

P. R. AURIEMMA, M.D.

It has been said that erythema infectiosum is more common than the few records of its occurrence would indicate and that it is missed entirely or misdiagnosed. From the experience recounted, the writer concludes that this might be true in isolated instances but hardly likely if several cases occur at about the same time.

First described by Tschamer of Germany in 1886 when it was thought to be "a peculiarly localized rubella," and called erythema infectiosum by Sticker in 1889, the disease was first described as a separate clinical entity by Escherich in 1896. Numerous epidemics occurred in Germany between 1886 and 1904 and, although its occurrence seemed to be associated with outbreak of German measles and measles, by 1904 opinion crystallized to the extent that it was determined to be a definite and separate entity; there was no cross-immunity with measles or German measles; and it was not a streptococcus infection. Endemic in Central Europe, numerous articles appeared especially in the German literature. Up to 1941 about 50 epidemics had been reported.[10]

Less well known in the United States, the first account of it was made in 1905 by Dr. H. L. K. Shaw, professor at the Albany Medical College, who saw some cases in Escherich's clinic in Vienna.[1] Later in Abt's Pediatrics 5:661 Shaw quotes a personal communication from Dr. Brauer of Hamburg, N. Y., regarding 37 cases seen in the spring of 1919. Zahorsky of St. Louis is said to have seen cases in 1914 and 1924. The first clinical report of an epidemic published in the United States was given by Herrick of Cleveland Heights, Ohio, in 1926 Following this, seven more epidemics were reported: Ogden, Utah (1929); Branford, Conn. (1931); Berkeley, Calif. (1932); Elmsford, N. Y. (1933); San Francisco (1940); New York City (1942); and Cuyahoga County, Ohio (1951).

Up to this writing the reports show 565 individual cases diagnosed, although in some epidemics mild cases were not reported. The number of cases in individual epidemics ranged from 10 to 128. Two epidemics occurred in institutions. In the San Francisco outbreak [7] 25 cases occurred in an orphanage, but by publicizing the disease and obtaining the cooperation of the medical profession 103 additional cases were diagnosed which otherwise very probably would not have been recognized as such. It is noteworthy that at the outset the exanthem often was considered to be a mild form of measles or German measles, erythema multiform, or an allergic phenomenon, the true nature of it not being determined until more cases appeared.

Description of Disease

All accounts agree on the clinical picture. Prodromes are mild or absent. When present they consist of temperature up to 101°, sore throat, gastrointestinal disturbance, coryza, chills, and malaise. The exanthem may be divided into three stages. In the first stage a bright erythematous rash appears on the cheeks accompanied by marked circumoral pallor—the rash resembling erysipelas or scarlet fever, like "cheeks that

had just been slapped."[10] Within 24 hours, or more, stage two appears. This occurs on the extensor surfaces of the arms and thighs and sometimes on the neck, upper chest, and buttocks as a rose-red erythematous rash with macules at the borders. Hands and feet remain free. The third stage may be described as the stage of evanescence, for the rash disappears for hours or days to reappear following trauma to the skin, such as rubbing, exposure to the sun, contact with heat or cold. This curious phenomenon seems to be characteristic. Papular type rash, red throat, fine desquamation, especially on the face, puffiness of the skin, and enlarged glands have been described in some epidemics. The clinical picture may last several days to several weeks and the evanescent character of stage three has been noted several months later. The incubation period has been variously described as from four to 14 days and up to 20 days. Various laboratory procedures[2, 4, 7, 8] have added nothing as to its etiology. About the only definite finding has been an eosinophilia up to 13 per cent. No complications have been reported.

Compton Outbreak

Early in March, 1953, a mother appeared at the Health Department because of rashes on four of her seven children and a niece. She was not satisfied when she had been told the rashes were "nothing." She brought along two children. The first child examined had a bright red erythema of the face with large macules at the erythema borders and marked circumoral pallor. There was no temperature and no other findings. The second child showed similar facial findings which had begun to fade, and in addition there was a bright red mottled rash on the extensor surfaces of the arms which stopped at the wrists and spread over to volar surfaces of arms. On the extensor surfaces of the thighs there was a very bright macular red rash. The extremities rashes had a peculiar reticulated appearance no doubt resembling the lace effect described in literature. This all suggested erythema infectiosum as described by MacKee and Cipollaro. Two days later the first child seen now had rash on extensor surfaces of extremities, thus clinching the diagnosis.

In all, 11 cases were found and diagnosed. With reference to the accompanying outline of cases it is noted that five of seven children, plus the mother, were affected in the C family, two of five children and the mother in the H family, and the two children in the B family. The C and H children are cousins and were in fairly constant contact. The first two cases appeared in cousins Lyle C and Ona H within 24 hours of each other. They attended the same junior high school. No other cases were found in this school. On contacting the school nurses of the school district representing over 12,000 children, the B cases were brought to light.

They were not known to the C or H family, nor was there any known contact. Affected children who attended school were represented in three different schools. The schools are within one-half mile of each other and the homes within one mile. No source of infection for the outbreak was found. Incubation periods ranged from four to a possible 19 days in the related families. In the B children there was a difference of 35 days between onsets, assuming the second child acquired the disease from the first. Prodromes were very mild; coughing, a symptom denied by Shaw and not mentioned in other reports, was present in five. All had the three stages except patient No. 10 who

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Table 1

No.	Name	Age	Onset	Prodromes	Stages I	Stages II	Stages III	Other Findings	Duration of Rash	Previous Exanthemata	Complications	Remarks
1.	Lyle C	14	2-24-53	Sore throat 1 day Cough 1 day	Yes	Yes	Yes	Single enlarged left anterior cervical gland 3-16-53	12 days	German measles	Gland still present 3-31-54 1½ cm. diameter. Moderately indurated	
2.	Ona H	14	2-24-53	Sore throat several days Cough 1 day	Yes	Yes	Yes	Puffy face enlarged cervical glands. Tiredness for 2 months	Intense for 1 week. Evanescence and recrudescence for 10 months	German measles Scarlet fever	Enlarged cervical glands for 3-4 months	Felt so tired. Refused to attend school except after constant persuasion
3.	Mack C	3	3-1-53	Wet nose 2 days Dry cough 1 day	Yes	Yes	Yes	0	8 days	0	0	
4.	Sharon C	6	3-1-53	Wet nose 3-4 days Sore throat and cough 1 day	Yes	Yes	Yes	Tiredness	2 weeks	0	0	
5.	Karen C	4	3-5-53	Running nose 4 days. Cough 1 day	Yes	Yes	Yes	Tiredness	Approximately 2 weeks	0	0	
6.	Mrs. L. C	33	3-8-53	0	Yes	Yes	Yes	Tiredness Slight dizziness	2 weeks	Usual childhood diseases	0	
7.	John H	2	3-13-53	0	Yes	Yes	Yes	Maculation of fauces	14 days	0	0	Mumps-onset 4-15 Rash reappeared for 2 days
8.	Mrs. O. H	36	3-14-53	0	Yes	Yes	Yes	Weakness Dizziness	Up to 10 months	German measles	0	Rash reappeared after penicillin injections and after emotional upsets
9.	Varley C	11	3-15-54	Wet nose 1 day	Yes	Yes	Yes	Maculation of palate	10 days	German measles Measles	0	
10.	Marsha B	8	3-12-53	0	Yes	Yes	Yes	0	6 weeks	0	0	Rash on face and upper chest only
11.	Mary B	6	4-16-53	Coryza starting 4-13	Yes	Yes	Yes	0	Unknown. Could not be followed	0	0	

had only a slight maculation on upper chest for stage two. This child was kept in a dark room for several days as the mother was sure it was going to be measles. During that period the rash faded, but almost immediately on exposure to the outdoor sun the rash reappeared. What was called "tiredness" was complained of or noted in most of the children. Patient No. 2 found trouble convincing others she could not attend school—she said she felt so tired she could not do her work and stayed out of school one month. This child had the most intense rash of all. Both mothers complained of dizziness. Patient No. 2 had several enlarged posterior cervical glands which disappeared after several months. Patient No. 1 acquired along with the rash an enlarged left anterior cervical gland about the size of a small walnut. In December, 10 months later, he had developed an upper respiratory infection which was accompanied by a considerable number of enlarged anterior and posterior cervical glands. It was noted that the original gland was still enlarged to about 1½ cm. in diameter at which size it had remained stationary for several months. The upper respiratory infection had not affected it. On March 31, 1954, the gland was still present without any change, although the acutely swollen glands acquired in December had subsided completely. Duration of rash to the time when it no longer reappeared was two weeks in most cases. In patient No. 10 it recurred up to six weeks. Patient No. 2 who had the most intense original rash had clear recurrences for a full 10 months, especially after bathing. This recurrent rash lasted from several hours to several days. Mrs. O. H., patient No. 8, had recurrences at variable periods up to 10 months, especially following overwork and emotional upsets and along with a series of penicillin injections. No papulation or desquamation was noted in any case. Itching was complained of by patient No. 1, but this occurred only on the legs following a horseback ride along a river bottom and was thought not to be part of the clinical picture. In this outbreak it is clear that the clinical pictures were not those of the well known exanthemata. Five patients gave histories of previous attacks of German measles, three of measles and one of scarlet fever. The outbreak occurred in the spring of the year along with episodes of German measles and measles. For the calendar year 1953 there were 198 reports on German measles and an epidemic of 1,320 reported cases of measles. For the first three months of 1953 there were reports of 58 German measles cases and 335 measles cases, as compared with 43 and 123, respectively, for the same period in 1954. No cases came to our attention in the spring of 1954.

The Compton Health District serves a population of over 185,000, among which are over 45,000 elementary and junior high school children. We have been on the lookout for this disease since 1946, but it was not until 1953 that we came across it. We are convinced with others that it is an unusual disease but that "once seen it is never forgotten."

Recapitulation

1. Identification of the Disease: A mildly contagious disease occurring in familial, institutional, and close contact groups, characterized by slight or no fever, slight or no upper respiratory symptoms, and a rash which may be divided into three stages. The first stage shows a bright red erythema of the cheeks with marked circumoral pallor. The second stage, which occurs from one to four days later, shows an extension of the erythema to the extensor surfaces of arms and thighs, the hands and feet remaining free; a rash may occur on the neck, upper chest, and buttocks. At the periphery there is maculation.

Maculation may occur in the fauces. The rash frequently assumes garland or lace-like configurations. The third stage, which usually lasts up to two weeks, has been observed to last as long as 10 months and is characterized by a curious series of evanescences and recrudescences brought on by mechanical injury (friction, injections), photo sensitization (sunlight), thermosensitization (heat and cold), concurrent infectious disease, and emotional stress. Patients complain of tiredness. There are no complications except enlarged cervical glands may persist for an indefinite period.

2. Etiologic Agent: Unknown. Several laboratory studies in the United States revealed nothing.

3. Source of Infection: Unknown. Focus in Central Europe.

4. Mode of Transmission: Unknown, but probably by droplet infection.

5. Incubation Period: Four to 11 days average; however, it may be 19 days or longer.

6. Period of Communicability: Unknown, but it may be as long as 28 days.

7. Susceptibility and Resistance: Unknown. Close contact needed for spread. Average age among children in our series was eight years, but mothers may acquire disease from their children.

8. Prevalence: Endemic in Central Europe, particularly Germany and Austria, and it has been reported in at least 12 countries, mostly European, and also from as far away from the endemic area as Turkey, China, Uruguay, and the United States. As far as is known nine previous episodes have been reported in the United States.

9. Mode of Control: Hardly anything is known about this. The disease is so mild and leaves so little in the way of complications that exclusion from school is not considered. Compulsory reporting of the disease, which has been recommended, may possibly lead to a greater awareness of its presence and to a greater interest in learning more about it.

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Comparison of Three Media for the Isolation of Enterotoxigenic Micrococci

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As there is no simple method for identifying enterotoxins elaborated by the food poisoning micrococci their isolation presents a difficult problem. The choice of a selective medium becomes a matter of special importance in epidemiologic investigations.

Numerous workers have investigated the biochemical properties of the pathogenic cocci in attempts to differentiate enterotoxigenic strains. In the course of such studies, tolerance for sodium chloride and the ability to ferment mannitol have been observed and these characteristics have been utilized in the development of selective media. A review of this literature is presented elsewhere.[1]

Chapman [2] produced a medium that combined the selective action of sodium chloride and the characteristic of mannitol fermentation. He reported that phenol red mannitol agar containing 7.5 per cent sodium chloride (PRMS) was especially effective in isolating pathogenic micrococci from heavily contaminated samples. Hussemann and Tanner [3] found that the ability to grow on PRMS was not a characteristic which could be used to differentiate between enterotoxigenic and nonenterotoxigenic micrococci. These authors did find, however, that organisms isolated from foods incriminated in food poisoning outbreaks formed acid on this medium more frequently than did strains isolated from other food sources.

The ability of micrococci to produce coagulase has been shown to bear a high correlation with pathogenicity. In 1946 Chapman [4] reported staphylococcus medium 110 (SM110) to be effective in the isolation of coagulase-positive micrococci. Velilla, et al.,[5] used both SM110 and PRMS in testing milk for the presence of cocci. They reported that growth of coagulase-positive cocci was usually much heavier on SM110 than on PRMS. Hartsell [6] reported that SM110 did not inhibit the growth of Staphylococcus aureus isolated from frozen eggs. Ludlam [7] reported a medium which would support the growth of few organisms other than coagulase-positive micrococci. This medium was considered by Chapman [8] to be less effective than SM110 in the isolation of pathogenic cocci.

Such conflicting claims would seem to indicate a need for an evaluation of the various media under identical circumstances. This study was undertaken in order to compare the selective action of phenol red mannitol salt agar (PRMS), staphylococcus medium 110 (SM110), and Ludlam's medium (L) for an enterotoxigenic strain of Micrococcus pyogenes var. aureus.

Experimental Methods

Certain characteristics are demanded of a selective medium. Ideally, it should allow the growth of all viable cells of the organism being investigated. Quantitative work is facilitated if the colonies produced are sufficiently characteristic in appearance to permit easy

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identification and if the growth of other organisms is inhibited.

To Determine If Viable Cocci Are Inhibited—An inaccurate impression may be obtained if media used for microbiological examination suppress the growth of viable cells. The tendency of the three selective media to suppress cocci was tested by comparing plate counts obtained on these media with those obtained on tryptone glucose extract agar (TGE).* Though there is evidence [9] that TGE does not produce maximum growth of certain organisms, its routine use in many laboratories as the standard medium for "total count" determinations was considered sufficient justification for its use in this comparison.

Standardized suspensions of 24-hour cultures of Micrococcus pyogenes var. aureus † were used as inocula in pour plates of PRMS, SM110, L, and TGE. Details of preparation of the inocula are reported by McDivitt and Hussemann.[10]

Triplicate replications of platings were made throughout the entire study. Plates were incubated at 37° C. for at least 40 hours and left at room temperature until the deep colonies on the L plates were sufficiently pigmented to allow accurate enumeration. Plate counts were then made. The data obtained from 15 such series were analyzed statistically.

To Test the Production of Characteristic Colonies—A second criterion examined was the ability of the selective media to produce coccus colonies of characteristic appearance.

Since this study represented a portion of a larger problem investigating the occurrence and growth of micrococci in ham, it was desirable to test the media with organisms characteristic of cooked meat. For this purpose an inoculum was prepared from the cultures isolated from cooked meat in previous experiments in this laboratory.[11] These cultures included 17 rod forms and one coccus culture.

Table 1—Composition of Selective Media: Phenol Red Mannitol Salt Agar (PRMS), Staphylococcus Medium 110 (SM110), and Ludlam's Medium (L)

Ingredient	Media		
	PRMS	SM110	L
	gm./l.	gm./l.	gm./l.
Beef extract	1.0	..	10.0
Yeast extract	..	2.5	..
Proteose-peptone	10.0	..	10.0
Tryptone	..	10.0	..
NaCl	75.0	75.0	..
d-mannitol	10.0	10.0	10.0
Agar	15.0	15.0	25.0
Phenol red	0.025	..	..
Gelatin	..	30.0	..
Lactose	..	2.0	..
$K_2H\ PO_4$	..	5.0	5.0
LiCl	..	..	5.0
Potassium tellurite	..	..	*
Final pH	7.4	7.0	9.2

* 1.0 ml. of a 0.005 per cent solution added to each 100 ml. of medium before pouring

Pour plates of PRMS and SM110 were inoculated with a nutrient broth suspension made up of cells of each of the meat organisms and of M. pyogenes var. aureus. After incubation the colonies on each plate which were judged to be coccus were counted. Verification was accomplished by picking all the colonies from each plate, staining the smears, and examining them microscopically. More than 1,000 colonies from each medium were subjected to these tests. Tallies of the right and wrong decisions were analyzed statistically.

To Show Ability to Suppress Non-coccus Colonies—The work described above served two purposes. In addition to providing information about colony

* The composition of each of the selective media is listed in Table 1.

† This culture, No. 196, was obtained through the kindness of Dr. G. M. Dack, professor of bacteriology and director of the Food Research Institute, University of Chicago. It had been isolated from food implicated in an outbreak of food poisoning.

Table 2—Viable Cells of Micrococcus pyogenes var. aureus per Milliliter of a Standardized Suspension as Determined by Plate Counts on Four Media (Mean Values for 15 Replications)

Media	cells/ml.
Tryptone glucose extract agar (TGE)	207
Phenol red mannitol salt agar (PRMS)	176
Staphylococcus medium 110 (SM110)	203
Ludlam's medium (L)	107

characteristics, it allowed a comparison of the ability of PRMS and SM110 to suppress noncoccus forms. The tests for suppression of rod forms were not quantitative in the sense that the numbers of rods and cocci in the inoculum were known. However, it would seem logical that rods should have predominated in the inoculum since they so outnumbered cocci in the meat cultures isolated by Page.[11]

To Evaluate the Selective Action of the Media in Examining Infected Food—In order to evaluate the performance of the media under conditions comparable to those of actual usage, tests were made with cooked ham samples inoculated on the surface with a suspension of cells of M. pyogenes var. aureus.[10] After incubation, the samples were ground aseptically with saline, diluted, and plated on the selective media and on TGE. Comparison was made of the numbers of cocci cells per gram of meat as indicated by PRMS, SM110, L, and TGE. In the course of two experiments different levels of inoculation were utilized.

Results and Discussion

From the results of the work described it was possible to evaluate the selective action of the three media for M. pyogenes var. aureus. Their relative suitability for use in a quantitative study of the growth of food poisoning micrococci in ham was indicated.

Specific observations on the growth of cultures on the various selective media may be of interest. On plates of staphylococcus medium 110 (SM110) incubated at 37° C. for 40–48 hours M. pyogenes var. aureus produced creamy surface colonies which on further holding at room temperature deepened to yellow orange. Even under these conditions the deep colonies could not be depended upon to develop pigment. In phenol red mannitol agar with 7.5 per cent NaCl (PRMS) fermentation of mannitol by cocci resulted in the characteristic yellow color. Unless the plates were poured with 20–25 ml. of medium the entire plate became yellow and it was impossible to define the reaction of individual colonies. Only coccus colonies were found on Ludlam's medium (L). The black surface colonies were readily counted after 48 hours of incubation, but the deep colonies were so like the medium in color and density that holding for an additional 12–24 hours was necessary before enumeration could be done accurately.

Present data [12, 9, 13] indicate that selective media may exhibit a certain degree of inhibition toward the microorganisms they are designed to isolate. Hartsell [14] pointed out that if this fact is not sufficiently appreciated workers may report that a material is free from the organism in question when in reality the cells have merely failed to grow. Table 2 shows the values obtained when the selective media and TGE were used to determine the number of cells of the test organism per ml. of a standardized

Table 3—Numbers of Organisms per Gram of Inoculated Ham as Indicated by Plate Count on Four Media

Media	cells/gm.	
	Series I	Series II
	Millions	Millions
Tryptone glucose extract agar (TGE)	9	11,800
Phenol red mannitol salt agar (PRMS)	6	10,100
Staphylococcus medium 110 (SM110)	9	13,200
Ludlam's medium (L)	<1	$<1,000$

inoculum. When used with a pure culture, SM110 and PRMS seemed to allow the growth of essentially as many cocci as did TGE. An analysis of variance indicated that the differences in numbers of cells on these media were not significant. Significantly smaller values were obtained with the use of the L medium.

The results obtained with Ludlam's medium were less uniform than those with PRMS and SM110. A possible explanation of the erratic behavior of L medium may lie in the fact that tellurite was added to each bottle of the melted medium just before it was poured, thus introducing variations that may be avoided when a medium can be made in large batches. Ludlam [15] in commenting on a series of studies conducted in his laboratory over a long period of time mentioned the unusual inhibitory action of certain batches of the tellurite agar.

The work in which inoculated ham was cultured on the four media was smaller in scope than that using pure cultures of micrococci. The results were not analyzed statistically, but they indicated a trend which was in agreement with the work with pure cultures. Values obtained with TGE, PRMS, and SM110 were in close agreement, while those with Ludlam's medium were markedly lower. Table 3 shows numbers of bacteria per gm. of inoculated ham as indicated by the four media. The values reported for TGE were those of total numbers of colonies, no separate count being made for rod forms.

Data in Table 4 show the success

Table 4—Comparative Success in Differentiating Rods and Cocci by Colony Appearance on Two Media

	Media	
	PRMS *	SM110 †
Total colonies examined	1,038	1,160
Correct identifications	989	1,102
Errors	49	58
Per cent accuracy	95.3	95.0

* Phenol red mannitol salt agar
† Staphylococcus medium 110

obtained in identifying coccus colonies on PRMS and SM110. Results from more than 1,000 trials on each medium indicated that a 95 per cent accuracy was possible on either medium. Once the worker became familiar with the various forms taken by rod and cocci colonies, a high degree of accuracy was possible. Surface colonies of rods and cocci could be readily distinguished, but some deep colonies caused difficulty. In regard to the ability to produce colonies characteristic enough in appearance to allow the differentiation of rod and coccus forms one medium is not to be preferred over the other.

Table 5 summarizes the results of the study which sought to determine whether PRMS or SM110 was more effective in selectively isolating cocci in

Table 5—Distribution of Bacterial Types on Two Media Inoculated from a Common Source

	Media	
	PRMS *	SM110 †
Total colonies examined	1,038	1,160
Cocci	297	877
Rods	741	283

* Phenol red mannitol salt agar
† Staphylococcus medium 110

a mixed flora. Markedly larger numbers of cocci were isolated on SM110. Since the two media were inoculated simultaneously from the same source of inoculum, it may be assumed that the greater recovery of cocci cells from SM110 was a reflection of the ability of this medium to allow their growth by selectively repressing the growth of rod forms.

On the basis of the fact that SM110 and PRMS are not significantly more inhibitory of cocci in pure culture than the widely used medium TGE, their use as selective media for M. pyogenes var. aureus is justified. SM110 was shown to be definitely superior to PRMS in suppressing noncoccus colonies and allowing a high recovery of cocci from a mixed culture. These results agree with those reported.[5] It would seem that if only one medium is to be used for the isolation of cocci from mixed flora, SM110 has certain advantages.

Summary

A comparison was made of three media selective for micrococci in light of their tendency to suppress coccus colonies, their ability to produce coccus colonies of characteristic appearance, and their tendency to suppress noncoccus colonies. The results indicate that:

1. SM110 and PRMS do not exert any significant inhibitory action on the growth of cocci in pure culture. Ludlam's medium depresses the growth of cocci to a significant degree.
2. Ninety-five per cent accuracy is possible in the identification of coccus colonies on both PRMS and SM110. One medium is not to be preferred over the other in this respect.
3. SM110 is markedly more active in suppressing noncoccus colonies than is PRMS.

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The Editor Retires—An Appreciation

Surely it has been granted to few men to serve the cause of the peoples' health so broadly and variously and with such profound impact as has Charles-Edward Amory Winslow. The whole globe was his work place, for he contributed to the World Health Organization with the same zeal and generosity that he lavished upon his native New England and the country at large. Seasoned practitioner, provocative teacher, wise counselor, and revered leader, Winslow has left his impress on many an area and the numbers of the people whom he helped will never be counted. Professor Winslow has resigned the editorship of this Journal, for reasons of health, having served since April, 1944.

He was uniquely prepared to enter upon the great variety of enterprises to which he was to contribute throughout his long and distinguished career. Born in Boston in 1877 he was ready for college during the time the restless, aggressive young Massachusetts Institute of Technology was venturing boldly upon the training of a new generation of public health workers. Under the challenging tutelage of the pioneering Sedgwick, the young Winslow fitted himself well for the tasks that were to lie ahead. He was graduated in 1898 but stayed on for another year of Sedgwick's guidance and to earn a master's degree.

As one of "Sedgwick's boys," Winslow's name is enrolled in that famous roster of illustrious scientists who broke new ground in the sanitary sciences through the research carried out at the Lawrence Experiment Station and the Engineering Division of the Massachusetts State Board of Health. The young Winslow soon joined the faculty of the Massachusetts Institute of Technology, serving both as assistant professor of sanitary biology and biologist in charge of the Sanitary Research Laboratory. After this propitious start in his teaching career, he moved on to New York City to become assistant professor of biology at the City College. Five years later he made the last change in faculty connections, returning to New England to become the Anna M. R. Lauder Professor of Public Health at Yale University Medical School.

The story of his many and immensely influential teaching years is so well and widely known that nothing can be added here to that brilliant record. Winslow was mentor and friend to generations of students and his teaching always was soundly based upon a growing body of solid field experience. His first administrative post had been that of assistant health officer of Montclair, N. J. Then, back in New York City, he had taken on the challenging job of curator of public health in the American Museum of Natural History. Because of his pioneering successes at the

museum in a then novel area of public health practice, Hermann M. Biggs called him to inaugurate a program of public health education for the newly reorganized New York State Department of Health. From that time onward he was never to be far removed from the practical workaday affairs of public health administration.

The true measure of the catholicity of Winslow's interests will be seen, not in the many professional positions of influence that he has held—and holds—but in the variety and scope of his "afterhours" contributions to the public welfare. From among many more the following may be singled out as illustrative. He was selected, in 1920, to be the first—the pathfinding chairman of our Association's influential Committee on Administrative Practice, and here with unflagging zeal he served the cause of better public health administration for a full 15 years. Again, he was made chairman of the New York State Commission on Ventilation during its crucial and most productive period. With never a break in his service he contributed mightily to the Connecticut Public Health Council's deliberations for more than 35 years, and similarly he has been chairman and guide of the Housing Authority in New Haven since 1938.

Charles-Edward Amory Winslow's name has a justly honored place in many professional societies. He was president of our own Association in 1926 and president of the American Society of Bacteriologists. Among his other out-of-the usual presidencies is that of the American Society of Heating and Ventilating Engineers. He guided the destinies of the American Journal of Bacteriology as editor-in-chief for 28 long years. As editor of this Journal for more than 10 years, he added greatly to its stature and influence. During a phenomenally productive half century this ever-in-demand leader has found the time to write—alone or with others—an imposing list of important books on widely divergent topics as suggested by these titles, "The Life of Hermann M. Biggs," "Temperature and Human Life," and that outstanding monograph published by WHO, "The Cost of Sickness and the Price of Health." A special issue of the Yale Journal of Medicine * better than anything else reveals the immense versatility of the man's interests, for it lists 574 items in his bibliography, not including his editorial productions.

Many uniquely deserved honors have come to Professor Winslow. It is, of course, out of the question to begin to list them, but two must be named: he received the APHA's most cherished award, the Sedgwick Memorial Medal, in 1942, and 10 years later he became the recipient of a special APHA Lasker Award. Perhaps a quotation from that citation may most fittingly be used to close these words of appreciation coming from his editorial associates.

> This recital of a few of his fields of interest and activity must carry with it appreciation also of Winslow the Man, of the concepts he has introduced into the public health movement, of his deep, intelligent devotion to the common good of all mankind. Profound, thoughtful, imaginative, and energetic, he has been a source of continuing inspiration to health workers in this country and abroad . . . his lucid lectures to thousands of students, his penetrating and decisive participation in councils throughout the world—all these have been reflected in great achievements in public health through the light and understanding and feeling which he has brought to his professional colleagues.

* March, 1947.

The Indians' Health and Public Health

All who have concerned themselves with bettering the productivity and efficiency of public health practice generally will be heartened by the recent enactment of a

law * transferring administration of hospital and health facilities for the American Indians from the Bureau of Indian Affairs to the Public Health Service. That the transfer of authority has been long—18 years—in coming about in no way detracts from the significance of this forward-looking step.

There are obvious advantages to be gained in placing the Indians' health facilities under the immediate and sole direction of technically qualified professional personnel experienced in solving the specific and peculiar health problems of the race. Though the Public Health Service has lent medical administrators and additional key personnel to the Bureau of Indian Affairs since 1926, the entire Indian Service—including health—has remained under the general direction and supervision of lay officials. Hence, the insistent and varied health needs of the Indian have had to compete for official attention and support with the often more clamorous demands of public roads, irrigation, education, and law and order. Transfer of the administrative function to the federal agency primarily concerned with matters of public health should tend to obviate the crippling of the health services because of this sort of competition. It should also assure dispatch in obtaining new facilities as well as equipment and supplies for those in operation. Further, the unshared control of funds by officers who understand the month-to-month needs of public health programs should improve the services by avoiding the hoarding of funds with the resulting year-end hurried purchases.

Another clear advantage will come from the freer access to all the special skills and the broad range of professional competencies which the Public Health Service commands. There are immediate benefits in staffing, too. Though some hospitals and health facilities in remote places will undoubtedly continue to present hard problems in this matter of personnel, the difficulties should be mitigated somewhat by access to the total professional pool of the Service through rotation. It is on record that the Bureau of Indian Affairs has found it virtually impossible to recruit adequate medical staffs through the Civil Service.

Admittedly there are difficulties to be faced in effecting this transfer. While medical care was administered under the broad framework of the bureau's program, it could perhaps be more readily integrated with educational and welfare activities, thereby lengthening the arm of the health service. From the new standpoint there may prove to be hazards inherent in budget authorizations and allocations, when the Indian health program will, in effect, find itself in competition for Congressional support with other activities of the Public Health Service. Given time, it would seem that these relationship problems, as well as the myriad details of organization and procedures, could be worked out. And there is time, for the transfer date is fixed in the law at July 1, 1955.

The major health problems of the Indian populations have been—and still are—the infectious diseases, conditions that have been largely controlled in the white population. It is clear that these infections continue to be a serious threat to the whole country, for Indians migrate long distances and in large numbers in seasons of agricultural employment. It was because of the seriousness of this hazard that most influential professional organizations, including our own, placed themselves on record emphatically in favor of this transfer. The Hoover Commission also recommended the change, as did the Survey Team appointed by the Secretary of the Interior.

It is earnestly to be hoped that this latest act of Congress transferring functions,

* Public Health Law No. 568, of the 83rd Congress, Chapter 658, Second Session.

responsibilities, and authority for Indian health services to the agency to which they logically belong will prove to be a precedent. There is much yet to be done in concentrating health services in public health departments—federal, state, and local. The successful culmination of this two-decade long effort to make more productive the health facilities for the Indian populations should remind us that this is not the time to rest on our laurels.

The New Institute of Nutrition (INCAP)

The inauguration on September 11th in Guatemala of a new building specially designed for research and training in public health nutrition represents the successful termination of the first five years of a unique and important international effort.

The Institute of Nutrition of Central America and Panama (INCAP) is a cooperative project of the five countries of Central America (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama) administered by the Pan American Sanitary Bureau, Regional Office of the World Health Organization, and assisted from its beginning by the W. K. Kellogg Foundation. Originally inaugurated in September of 1949, the activities of INCAP quickly outgrew its initial facilities and the present building has been under construction by the Government of Guatemala for two years at a total cost of $180,000.

Among the projects of INCAP of international importance have been the publication of a Food Composition Table for the region, the demonstration of the seriousness of endemic goiter in the area, and the development of a practical method for the iodation of crude salt; there have been cooperative studies with agricultural agencies of plant varieties of high nutritive value as well as yield, studies of the effects of vitamin B_{12} and antibiotics in undernourished children, the demonstration of the use of indigenous plants in human and animal feeding, training of personnel from the Central American area and many other parts of the world, and the preparation of considerable nutrition education material for use in the underdeveloped areas of Latin America.

It is particularly significant that, with the sole exception of the director, the extensive programs have been carried out entirely by Central Americans who have received and are receiving advanced training in various institutions in the United States to enable them to carry out this work.

The influence of INCAP as a demonstration and training center on public health research, particularly in the field of nutrition, is already evident and the members of the American Public Health Association will watch with considerable interest the continued development of INCAP.

Credit Lines

The Journal cannot furnish copies of items mentioned in Credit Lines. Please send requests to the addresses given.

Alcoholism Facilities Inadequate

Early in 1954 the Committee on Alcoholism of the Welfare and Health Council of New York City published its 1953 report. It calls attention to the fact that "alcoholism is an active factor in the lives of 200,000 residents of the city" and that it accounts for losses of more than $200,000,000 a year in wages, medical costs, and lost production, in addition to the cost to the city of caring for alcoholics and often their dependents.

Facilities are called "grossly inadequate" and chief recommendations made are:

1. Development of an acceptable system and terminology for medical reporting of cases.
2. Inpatient and outpatient clinics in hospital-connected medical schools and re-establishment of Bellevue Hospital's alcoholic ward.
3. Effective instruction in schools in alcoholism prevention.
4. Establishment of commitment procedures.
5. Inducing health insurance plans to accept alcoholism as an insurable risk.

The supply of the 1953 report is exhausted, but printed copies of the 1952 report covering much the same material are still available from Welfare and Health Council of New York City, 44 East 23rd St., New York 10.

All About Rehabilitation Centers

With the greatly enlarged program of federal support of rehabilitation made possible by recent legislation, "Rehabilitation Centers in the United States" takes on added importance as a frame of reference for the new and enlarged program. Published in 1953, the pamphlet contains information prepared from material submitted by some 40 rehabilitation centers throughout the country for the First National Conference on Rehabilitation Centers, held in December, 1952, under the joint sponsorship of the federal Office of Vocational Rehabilitation and the National Society for Crippled Children and Adults.

In addition to a brief summary of the history and philosophy of rehabilitation centers, the pamphlet contains detailed information about 40 centers located in 22 states and the District of Columbia.

The author is Henry Redkey, consultant on rehabilitation centers of the Office of Vocational Rehabilitation. The pamphlet was published and distributed by the National Society for Crippled Children and Adults, 11 South LaSalle St., Chicago 3, Ill.; $1.

An Occupational Health Institute

A report in English of the Finnish Occupational Medical Foundation's Institute of Occupational Health has recently been received that, in addition to its intrinsic interest, illustrates a type of cooperation among private and public bodies that might fruitfully be explored elsewhere. The institute, which is one of the means by which the foundation carries out its research, information, and guidance in the field of occupational medicine, gives consultant service to both private industry and government agencies, conducts a diagnostic and clinic center for occupational diseases, operates an industrial health center in Helsinki, and does educational work in occupational health and social medicine. Of its 15 member Board of Trustees, eight are nominated by the Cabinet and

represent the State Medical Board, the Helsinki Medical Faculty, the Finland Institute of Technology, the federal Departments or Ministries of Internal Affairs, Social Insurance and Old Age Pensions, Labor, and Disabled. The other seven members are nominated, respectively, by the Association of Employees, Federation of Finnish Trade Unions, Association of Insurance Companies, Association for Preventing Accidents, and the City of Helsinki.

Another interesting fact is that of total 1953 costs of the institute only one-fourth was provided by the state. The remainder was earned income from the work of the institute. The report includes a list and brief description of 130 publications, studies, general surveys, textbooks, and handbooks published in 1953 from work done in the institute. Government Printing Office, Helsinki. No information as to price.

Georgia PTA Health Action Program

"Going Places in Health" is published by the Georgia Congress of Parents and Teachers. It is designed to help the health committee of a local PTA in planning health activities. The pamphlet is acknowledged to "represent the thinking and effort of many individuals." A number of staff members of the Georgia Department of Health served on an advisory committee, several as consultants. The State Department of Education and the University of Georgia were involved as were the state medical, dental, pediatric, and education associations.

There are just two main topics—Where to Develop Health Programs and Information Guidepost. The first, taking up most of the pamphlet, begins with the community and ends with the world. The second is an extensive list of information sources classified by subject from Child Growth to School Hygiene Education. Presumably available from the Georgia PTA, 26 Cain St., N.W., Atlanta.

Packets on Human Relations Aids

Early in 1954, the Mental Health Materials Center organized a packet service of "human relations aids" for persons concerned with education programs on family life and human relations. The purpose is to enable individuals and organizations to keep up with new educational materials on family living, life adjustment, and mental health. At the outset packets were supplied quarterly at an annual subscription of $6. The response has been so wide that the service is now being offered bi-monthly at the same rate.

Items for the packet are selected by Nina Ridenour, Ph.D., mental health education specialist, and a panel of educators, psychiatrists, physicians, and clergy. Provision is made for cancelling a subscription if not satisfied with the first packet received.

Human Relations Aids, 1790 Broadway, New York 19.

Coronet Praises Felix Underwood

The October issue of Coronet magazine, under the title "Mississippi's Medical Giant" tells the story of what has been accomplished during the 30 years tenure of Felix J. Underwood, M.D., as the state's health officer. The author, Allen Rankin, says that from "the unhealthiest state in the Union" Dr. Underwood has transformed Mississippi into "a model of fine medical practices" and "a national pace-setter in the field of public health." Dr. Underwood's 1953 Lasker Award is mentioned. This human story of a successful health officer, besides pleasing his many friends, has value in helping people to understand what public health is and in making tangible its attractions as a career for young people.

Canada's Mental Health Services

"Mental Health Services in Canada" was prepared for the 5th International Congress on Mental Health, which met in Toronto in August, 1954. There is a complete detailing of present health services nationally and in the various provinces. Five main future objectives are outlined: more adequate development of the central mental health divisions, further improvement in mental hospital administration from both the medical and nonmedical aspects, better integration of psychiatric with other health programs, reassessment of training programs, and evaluation of present research. In addition are the need to eradicate prejudices associated with mental illness and the need for greater public participation in the activities of mental hospitals.

The report was prepared in the National Health and Welfare's Research Division whose director is Joseph W. Willard, Ottawa.

An Employee Magazine

"Inside Health," a publication for employees, tells "about the events in the lives of the employees in the Department of Health (New York City) in their relationship to the Department." Vol. I, No. I actually appeared in 1953 after which it went into eclipse but resumed again in January, 1954, and by April attained monthly stature. It has a commissioner's column, chatty personal news about employees, lists of awards to workers for "bright" ideas, explanation of civil service procedures, among others. It should have real value as a morale builder.

New York's Committee on the Aging

New York State has a Joint Legislative Committee on Problems of the Aging. It has the services of an interdepartmental advisory committee made up of the commissioners of nine of the state departments, including the Department of Health. The committee's 1954 report, "Growing with the Years," has recently been published. Its emphasis is on changing attitudes so that "old" will no longer be an epithet in our culture.

In addition to the committee's report, there are 27 papers dealing with various aspects of the problems of the aging by numerous authors, Professor C.-E. A. Winslow, Edward L. Borts, M.D., Ernst P. Boas, M.D., Ollie A. Randall, among others.

It is a handsome job of printing and illustration. It is offered free of charge by the chairman of the Legislative Committee, State Senator Thomas D. Desmond, 94 Broadway, Newburgh, N. Y.

Worth Acquiring

"How Many General Hospital Beds Are Needed?" is subtitled "A Reappraisal of Bed Needs in Relation to Population," thus indicating the need for changes in ratios of hospital beds with changes in the incidence of sickness, medical practice, composition of the population, and hospital practice itself. The pamphlet summarizes the various formulas that have been used in estimating the need for hospital beds and emphasizes the need for constant reassessment. The relation of the increased need for medically supervised nursing homes and old-age homes to the need for general hospital beds gets particular attention.

The authors are Louis S. Reed and Helen Hollingsworth, staff members at the time of writing, of the Division of Medical and Hospital Resources, Public Health Service. PHS publication No. 309, Gov. Ptg. Office, Washington 25, D. C.; 25 cents.

"Gains for Handicapped Children" is No. 212 of Public Affairs Pamphlets, of

which more than one-third are still current and available. This newest one summarizes what the conditions are that cause handicapping in children, what is being done about them and what remains to be done. Expanded research, better planning and coordination of community facilities, increasing trained personnel, and spreading present knowledge more widely are among the things still to be done.

Herbert Yahraes, author of other Public Affairs Pamphlets, is the author. The foreword is by Leonard Mayo, director, Association for the Aid of Crippled Children, which jointly sponsored the pamphlet. Public Affairs Committee, 22 E. 38th St., New York 16; 25 cents.

Annual Reports

"We Work Together" and a sturdily welded chain of 9 links on the cover of the Sullivan County (Tenn.) Health Department's 1953 annual report symbolize "the fact that it is the business of everybody to protect the health of himself and others, and that all links in the chain must be strong if the total result is to be successful." The report is well written and illustrated. Its not unusual plea is for more resources—in money and personnel—to accomplish the goal of better health for the citizens of the county. J. W. Erwin, M.D., is the health officer, Blountville.

Division of Child Hygiene, Newark (N.J.) Department of Health, 40th Annual Report is more than an annual report. It is the summation of 40 years of life work of Julius Levy, M.D., director of the division for nearly half a century. Not unrelated are these two sets of facts. In 1913 only one nurse was supervising newborn babies in two wards; in 1953 the entire city was covered by a staff of 36 nurses and 9 doctors working from 22 well baby stations. In 1913 the infant mortality rate was 93, in 1953, 25.8. The results of immunization are illustrated by the fact that in 1913 there were 1,594 cases of diphtheria reported and 110 deaths; in 1953 no cases; and no deaths for 10 years.

Annual Report '53, Cook County Health Department, is a handsome three color job. It describes the work of the department in terms of actual situations, the private sewer systems that no longer were adequate, the youngster who gets his diphtheria shots, the old swimming hole, etc. John B. Hall, M.D., is the health officer of this department that serves three-quarters of a million people in Cook County, outside of Chicago and several other large cities.

Books and Reports

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

American Nursing: History and Interpretation—By Mary M. Roberts. New York: Macmillan (60 Fifth Ave.), 1954. 688 pp. Price, $6.00.

Nurses, student nurses, doctors, hospital and health administrators, and board and committee members should be concerned with this book. It will pay one to read, browse through, and return to from time to time in order to understand what has happened to make professional nursing what it is today, what its inherited and current problems are, and what direction it is taking in response to the needs of the public. For if no other impression remains after reading Miss Roberts' masterly review of 52 years of American nursing, one will know how nurses have tried unceasingly to meet the needs of the people in homes, hospitals, schools, and industries, in war, in peace, in disaster, and depression.

To those of us who have known nursing for more than a quarter century, Miss Roberts' interpretation of events is fascinating. She brings together for the first time the myriad developments, large and small, national and international, which have vitally influenced and changed nursing from the "handmaid to doctor" stage, to a profession in its own right. For newcomers in the field of health, the story cannot fail to deepen their understanding and widen their conception of the future of nursing. For all readers the book will serve as an extraordinarily rich mine of reference materials. Its documentation is above reproach and superbly accurate in such matters as names, dates, titles, and places. Its scope is impressive.

Why is this book of special interest to non-nurses? Because it digs back into the growing problems of administration. How shall hospital nursing services be financed? What is to happen to nurses with the rising costs of medical care? What has been done to include nursing in hospital prepayment plans? Why is the phrase "shortage of nurses" only partially accurate? What part have the national and federal nursing groups played in developing nursing service to meet the needs of the public in peace and war? What is happening to voluntary agencies? Where do practical nurses fit into the picture? One must look at the present in the light of the past to have a true conception of what nursing faces in the years to come, and one of the most inspiring sections of this book is the one which presents the recent "restructuring" of the voluntary national agencies. Many readers will get a perspective on these changes for the first time. And do not miss the chapters on international relationships in nursing. They restore one's faith in the ultimate goal of a world-wide brotherhood of man. In short, this is a definitive presentation of American nursing history since 1900 which should not be skipped. DOROTHY DEMING

Guide Lines for Group Leaders—The Why and How of Group Work—By Janet P. Murray and Clyde E. Murray. New York: Morrow (425 Fourth Ave.), 1954. 224 pp. Price, $3.95.

Although this volume requires a little time to get to the place where a group worker with even slight experience feels that it is worth reading, once having reached that point, there is much good in every chapter. Once the reader sees the plan, the book is very easy to use as a source of guidance. The section

headings seem particularly helpful. Chapter VI, The Individual in the Group, could well be used for study by a committee of professional and volunteer group workers.

For those leaders who are young and inexperienced in the subtle variety of discipline demanded by modern child psychology, the chapter on control and discipline will be worth the price of the book. Best of all, is the final chapter where a leader is defined and counseled in democratic procedure.

EDITH M. GATES

Antiseptics, Disinfectants, Fungicides, and Chemical and Physical Sterilization—Edited by George F. Reddish. Philadelphia, Pa.: Lea and Febiger (600 Washington Sq.), 1954. 841 pp. Price, $15.00.

This book is the result of the combined efforts of 30 collaborators who are considered to be authorities in their respective fields of chemical antiseptics, disinfectants, fungicides, virucides, etc., and physical methods for the destruction of microorganisms. Excluded from the text is any detailed account of antibiotics or other chemotherapeutic agents.

The introductory chapters present the historical development of antimicrobial agents and processes, and test methods for measuring the effectiveness of the latter. A further consideration of these subjects is found in the introductory paragraphs of the chapters by the individual contributors. In addition to sections on iodine, the mercurials, alcohols, heavy metal salts, quaternaries, pine oil, chlorine, etc., the text contains information on the more recent developments in disinfection, such as the use of the bisphenols (hexachlorophene, etc.), gaseous disinfectants (ethylene oxide, etc.), and ionizing radiations for the destruction of microorganisms.

Several chapters are devoted to the effectiveness of heat in the destruction of parasitic and saprophytic agents and the use of chemical preservatives in various industries and food processing plants. Considerable space is given to suggestions for selecting the most suitable means for destroying organisms encountered in surgical practice. As a guide to the present concepts on the mechanism of action, methods for selecting and testing chemical and physical agents for activity, this book should prove to be a valuable reference and source text to physicians, microbiologists, and public health workers.

CARL A. LAWRENCE

Coronary Heart Disease in Young Adults—By Menard M. Gertler and Paul D. White. Cambridge, Mass.: Harvard University Press, 1954. 218 pp. Price, $5.00.

Public health programs customarily attack the agents of disease. In coronary heart disease there may be no "agent" in the usual sense, so it is not surprising that public health efforts at its control have been trivial and ineffective. However, the leading cause of mortality in this country cannot be neglected indefinitely and a beginning is to ask what differentiates the prospective coronary victim from his fellows.

A quarter of a century ago Dr. Paul Dudley White and his colleagues began to study this question by comparing coronary patients with "controls" and this method has been continued in the present report on 100 young (under 40) patients. The patients tended to be stocky ("mesomorphic"), to have high blood concentrations of cholesterol and uric acid, and to produce peculiar saliva. On the other hand, they were not remarkable in obesity, basal metabolism, or dietary cholesterol intake. Most of these points agree with other investigations, so some solid facts are appearing.

Major applications to preventive programs are still far off, but it is probable

that such statistical comparisons, extended to more characteristics of the mode of life and to populations differing in susceptibility, will yield a real basis for public health work. The study of the epidemiology of noncommunicable disease presents both a challenge and a hope and explorations like that reported here should intrigue the public health expert as well as the cardiologist.

ANCEL KEYS

Fifty Years of Technical Assistance. Some Administrative Experiences of U. S. Voluntary Agencies—By Edwin A. Bock. Chicago, Ill.: Public Administration Clearing House (45 East 65th St.), 1954. 65 pp. Price, $1.50.

This little book will be of the greatest value to those who are to undertake or administer public health activities in cultures which are new to them. It "summarizes the rich experience of representatives of many American voluntary agencies which were operating in every quarter of the globe for half a century before the phrase 'technical assistance' became current." This excellent condensation of practical experience is based on interviews with 55 persons who have had long experience in technical assistance in health, literacy, and agriculture in less developed countries. It provides sound suggestions for planning and action and it points out many of the dangers.

The major considerations in the book are the selection and formulation of projects; the selection, recruitment, and orientation of personnel; the initiation, operation, and withdrawal stages of the operation; the value of experts and short-term missions; and evaluation.

Special emphasis is placed upon the development of a spirit of self-help and initiative on the part of the people, long-term versus short-term projects, the community approach to problem solving, teamwork, the careful selection of visiting and of indigenous workers; and a sound understanding of the psychology and cultural background involved.

CLAIR E. TURNER

Beyond the Germ Theory. The Roles of Deprivation and Stress in Health and Disease—Edited by Iago Galdston. New York: Health Education Council (10 Downing Street), 1954. 182 pp. Price, $4.00.

Disease is older than man. It is coeval with life itself, for it is an attribute of life. A living organism is a labile entity in a world of flux and change, and both health and disease are linked aspects of this unstable equilibrium. Health and disease express changing relationships between the various components of the body and between the organism and the external environment in which it has its being. Different working balances can be achieved in these relationships, so that health and disease are terms conceptualizing processes and may comprehend a variety of situations in which various factors interact to produce a relative harmony or a relative disharmony for the organism. Health and disease cannot be divorced from their base, the living organism, under given environmental conditions.

These general conceptions are not new. Physicians in earlier periods were aware of them, but they were overshadowed by the dazzling successes of the bacteriological era. The formulation and development of such ideas on more precise physiological and pathological bases tend more and more to characterize the medicine of our day. The current status of these developments and their significance for clinical medicine, public health, and health education are the themes with which the volume under review is concerned. Based upon papers presented at the 12th Annual Eastern States Health Education Conference sponsored by the New York

Academy of Medicine, the book is a worthy successor to earlier volumes derived from the same source.

Concerned chiefly with deprivation and stress, the material is divided into four parts: the dynamics of deprivation and stress, nutritional deprivation and stress, psychological deprivation and stress, and social stress and deprivation. As a whole the book is provocative and interesting. The contributors are all experts in their particular fields and the editing has been carefully carried out so that the presentation is a rounded one. As might be expected, some of the contributions are better than others. Particularly outstanding are the two papers by H. D. Kruse.

There are several statements that should have been corrected or amplified. Thus, Patrick Manson is not famous for discovering the transmission of malarial infection, but of filarial infection. However, Manson then formulated the mosquito theory of malaria transmission (p. 10). Also the statement by Tompkins and Wiehl (p. 79) that 75 per cent of a group of women studied reject their pregnancies during the first trimester should have been developed more fully. What sort of a population group do these women represent? What methods were employed to arrive at the conclusion? And so forth.

This is a book worth reading, not so much for the facts it contains, but for the questions it raises.

GEORGE ROSEN

Group Work in the Institution—A Modern Challenge — By Gisela Konopka. New York: Morrow (425 Fourth Ave.), 1954. 304 pp. Price, $4.50.

The philosophy of institutional care for the poor, the mentally ill, the orphan and dependent child, and the criminal has been based on the principles of protection of society and punishment for behavior that would threaten society. In this century we have learned, through development of social service concepts and advances in scientific and medical knowledge, that rehabilitation rather than punishment is a desirable goal of institutional care.

This changing emphasis has stimulated the development of group work as an important branch of social work, since the other commonly recognized fields of social work, casework, and community organization are not particularly fitted to helping people on a group basis in an institutional environment.

Because social group work has developed principally in institutions for the young, the author restricts much of her excellent analysis of the functions and methods of group work to institutions for orphaned and neglected children, unmarried mothers, juvenile delinquents, and prisoners.

Only a few paragraphs in a concluding chapter are devoted to group work activities in homes for the aged, and nothing is said about the hospital for chronic diseases. Nevertheless, administrators of such institutions and executives and planners in the health and hospital fields who are becoming increasingly concerned with care of the long-term ill, the infirm, and the custodial patient, will find this a valuable source book for a type of social work that is becoming increasingly indispensable for proper treatment of their charges.

DAVID LITTAUER

Guidance Through Drama. A Series of Six Tested and Approved Plays to Illuminate Family, Child, School Problems—By M. Jerry Weiss. New York: Morrow (425 Fourth Ave.), 1954. 333 pp. Price, $3.95.

This series of plays is designed to stimulate discussion of the adolescent problems with which it deals by parents, school personnel, and students. The

plays should be usable in almost any situation because they are brief and require no costumes and practically no stage properties. Each play ends with an unresolved situation which, in effect, asks the audience "What do you think?" or "What would you do?"

Major problems dealt with are mutual responsibilities of parents and children, vocational planning as related to socioeconomic factors, effects of the draft on youth and the family, overprotection and its effect on the girl who goes away to college, some prevalent school drop-out factors, and the issues of dating and going steady.

A valuable part of the book is the chapter "For the Discussion Leader," giving suggestions for provoking discussion and for handling troublesome situations based on the experience of several outstanding discussion leaders. Ruth Strang, in the foreword, says that "wisely and skillfully used, these plays serve as one more instrument of guidance; they are a means of evoking interest and realistic thinking on the part of students, parents, and the school staff."

This book should be useful to the many groups interested in promoting more effective guidance in school, at home, and in the community.

PAULINE K. MATTHIS

How to Help Older People: A Guide for You and Your Family—By Julietta K. Arthur. Philadelphia, Pa.: Lippincott (East Washington Sq.), 1954. 500 pp. Price, $4.95.

This is one of the currently popular "how to" books on a subject increasingly important, but far too complex and highly individual to lend itself to really adequate discussion in this kind of volume. The practical information in the text and appendix is direct and generally well organized. The author's sympathetic understanding of human problems and situations is obvious. Her discussion of "how to help" finds its basis in a philosophy which recognizes the dignity of the human being of any age and in any state of mind or of health. She realizes such recognition as the primary requisite of any "help" that is "help."

Appropriate use of "How to Help Older People" will direct the reader to the right resources or agencies for the right kind of help. It cannot and should not be regarded as a substitute for either. If experience has taught us any one thing, it is that families and their elderly relatives are seldom able to distinguish between their emotional and rational responses to trouble or to identify the sources. The danger then is that readers may be encouraged to believe that the use of the guide alone will improve the chances of successful personal adjustments.

The book is easy reading, testimony to the author's skill as a writer. It is replete with interesting anecdotes and examples of both failure and success on the part of individuals and families. While fascinating, these at times seriously distract attention from the sound principles they are intended to illustrate and appreciation of the logical development of the author's thesis. The whole volume is ample evidence of conscientious, earnest research, together with intelligent selection and use of existing source material, on a topic which promises to be of concern to all of us for a long time to come.

OLLIE A. RANDALL

An Introduction to Pathology and Bacteriology for Medical Students in the Tropics—By E. C. Smith and revised by R. Kirk (2nd ed. rev.). New York: Staples Press (70 East 45th St.), 1954. 390 pp. Price, $9.00.

The first edition of this book was published 15 years ago by the late Dr. Smith as a handy compendium to equip the student with a knowledge of essentials

of clinical pathology and bacteriology. It was meant to help those who are generally lost among the details given in the standard textbooks at the expense of the broad principles. The author did not include special pathology nor claim the book to be a substitute for many excellent textbooks available. Dr. Kirk, professor of pathology in the University College of Khartoum, South Africa, has now revised and enlarged the text to bring it up to date for a wider use by students in the tropics everywhere.

There are 22 chapters, the majority of which run between 13 and 16 pages, fairly well illustrated by photomicrographs, colored drawings, and plates. The earlier chapters follow the traditional introduction to pathology, followed by 13 chapters on bacteriological technic and description of bacteria in relation to clinical medicine. The longest chapters, aptly enough, deal with the diseases common in the tropics, e.g., leprosy, tuberculosis, viruses and rickettsias, fungi, spirochetes, protozoa and helminths. The last few chapters deal with diseases of blood, the pathology of the liver and other abdominal organs and endocrine glands, supplemented by three useful appendixes, including one on postmortem technic.

Within the limitations imposed by the authors themselves there is not much left to be critical about except to point out that the modern classification and diagnostic technics have been missed in the description of V. cholerae, P. pestis, and P. pseudotuberculosis; the use of 0.2 MLD as a dose of Schick test toxin is much above the standard, and the interval of three months between the two doses of APT is too long. PPD deserves mention in connection with the tuberculin test and so also lepromin test in leprosy. The disease kwashiorkor may be described under nutritional deficiencies; perhaps it would have been worthwhile to include in the book epidemic dropsy and mushroom poisoning which frequently occur in the eastern tropics and two other appendixes on the differential diagnosis of enlargement of liver and spleen.

The book is excellently printed on good paper and well bound. With a reasonable size of 375 pages it should be attractive to any medical student as a help book. Also to a physician practicing in the remote areas in the tropics, this book will serve admirably as a "refresher course." S. C. SEAL

Management and Union Health and Medical Programs—By Margaret C. Klem and Margaret F. McKiever. Public Health Service Publication 329. Washington, D. C.: Gov. Ptg. Office, 1953. 276 pp. Price, $1.00.

This is the third in a series of publications dealing with health and medical services for industrial workers. The concern of the first two volumes with in-plant medical services is logically extended in the current publication to health and medical services provided outside of the plant to workers and their families under the sponsorship of trade unions, management, or both.

The report consists of five sections, the first four of which present such useful information on health and welfare plans as the significant events influencing their development; the extent of coverage and the scope of benefits provided; salient features of major types of medical care insurance contracts; and methods of administering and financing health and welfare funds established under collective bargaining agreements.

Appropriately—in terms of labor's increasing interest—the major portion of the text, Section V, is devoted to detailed descriptions of selected, and widely varying, programs whose services are organized around health centers, generally administered by trade unions or under joint union-management sponsorship. For each program informa-

tion is presented on the organization, administration, scope and volume of services provided, method of paying for physician's services, etc. The emphasis placed in several of these programs on preventive services and health education will be of particular interest to health workers.

Drawing upon extensive source material as well as personal interviews, the report presents in concise form information that is useful to unions, management, and health workers interested in this development. An extensive bibliography and appendixes which include much pertinent documentation enhance the report's usefulness. The pruning of some repetitious and extraneous documentary material from the text itself, however, would improve the readability of an otherwise well written document.

Although essentially descriptive, the report does, to a limited extent, indicate the strengths and shortcomings of medical care insurance plans. These important aspects, however, are occasionally lost in the welter of material presented. This publication should serve to stimulate a more critical evaluation of existing plans that could serve as a guide to those interested.

NATHAN KRAMER

Distribution of Health Services in the Structure of State Government—By Aaron W. Christensen, Evelyn Flook, and Rubye F. Mullins. Public Health Service Publication 134, Part Four. Washington, D. C.: Gov. Ptg. Office, 1953. Pp. 279–360. Price, $.50.

This, the final report of the series, considers the distribution of services for environmental sanitation. (See A.J.P.H. 42:1334 (Oct.), 1952, for Part One; 43:228 (Feb.), 1953, for Part Two; and 44:821 (June), 1954, for Part Three.) As reported for other health activities, coverage of environmental sanitation is characterized by dispersal of responsibility. Milk and food supervision show the greatest variation of responsibilities, with 13 departments, agencies, or commissions listed.

The total of environmental sanitation is considered in five major categories: water, sewage, and industrial wastes; vector control; milk and food sanitation; occupational health and safety; and miscellaneous, including hotels, bathing places, garbage disposal, and accident prevention. There is a separate section on expenditures. The data are shown for each state, responsible agencies being listed on a state-by-state basis. As with the other reports, 1950 is the datum year.

Comparisons are made with conditions found in 1940 in some instances. Rodent control operations were reported in 25 states in 1950 as contrasted with only 12 the preceding decade. Occupational health activities show an even greater growth. In 1940 more than one-fourth of the states had no industrial health activities. In 1950 all but eight state departments had at least one full-time staff employee in such services. Expenditures for environmental sanitation were much below the increase for all health services. Total spent in the states in 1950 was 245 per cent more than in 1940, but when costs for accident prevention work are eliminated, environmental sanitation expenditures show a gain of only 31 per cent for the same period.

FRANCIS B. ELDER

Readings in the Theory and Practice of Medical Social Work—By Dora Goldstine. Chicago, Ill.: University of Chicago Press, 1954. 344 pp. Price, $5.00.

This volume is a welcome compilation of articles on medical social work by able representatives in the profession which, as the author states, presents "in readily accessible form writings that would be of value either in conveying knowledge or in pointing up the need

for greater analysis." Considering the difficulty most practitioners have in keeping up with the literature (scattered as it is) to the extent that one can observe trends, the book will meet a long-felt need. Miss Goldstine deserves high praise for the painstaking scholarly job she has done.

The book is divided into two main sections: Medical Social Work, A General View, and Social Work Practice in the Medical Setting. The four general view articles are provocative in different ways. The second section, with subdivisions on the Influence of the Setting, Basic Concepts and Their Application, and Specific Use of Basic Skills, shows care in the selection of articles to give a perspective about a young profession working on solving the problems of individuals—proceeding in the manner and at the pace of other young professions. The author's lead article is an excellent background against which the remainder of the book should be read. It supports her finding that "one follows a cycle of discovery and rediscovery, characterized by a growing awareness, a sharpening insight, a steady refinement of thought, and an ever deepening realization of the potentials for service in this segment of social work."

This volume has validity on its own, but the promise of a second compilation which will present the expanding contribution of medical social work to administration, community planning, and education should stimulate and challenge medical social workers in public health and welfare programs, in particular, to analyze and report their use of medical social skills in these areas in a way that will further demonstrate the progressive achievements of the profession and be a base for comparative analysis of the literature in the field. This reader recommends the book to practitioners and administrators engaged in health care. MARY S. WEAVER

The Surgery of Pulmonary Tuberculosis—By James H. Forsee. Philadelphia, Pa.: Lea & Febiger (600 Washington Square), 1954. 208 pp. Price, $6.50.

As Evarts A. Graham, himself a notable chest surgeon, says in his laudatory foreword to the book, the author "has produced a monograph which will bring the reader up to date with the latest thought on the application of surgery to the treatment of pulmonary tuberculosis."

Colonel Forsee in a brief compass of 200 pages traces the development of surgical procedures, states his own preferences clearly—as he has a right to do, having had wide experience—and gives data on results. In recent years the author has resorted to primary thoracoplasty in uncomplicated tuberculosis in only 10 per cent of cases treated surgically, seldom uses artificial pneumothorax, has done extrapleural pneumothorax only once since 1947, and has abandoned extrapleural plombage. The great swing since chemotherapy became available in 1947 has been toward extirpative surgical therapy.

The author gives indications for resections of various kinds—wedge excision, segmental resection, lobectomy, and pneumonectomy, the object being the eradication of active disease and the conservation of normal lung tissue. He prefers lobectomy for advanced or cavitary tuberculosis and feels that the indications for pneumonectomy are very limited. His technics are described. He stresses the necessity of meticulous attention to details before, during, and after the operation, wide exposure of the operative field, expertly administered anesthesia, and whole blood replacement.

The author's over-all results of extirpative surgery, with the aid of chemotherapy, in 443 cases, show that 91 per cent are well. His operative mortality since 1947 (excluding pneumonectomy)

in uncomplicated tuberculosis has been 1.8 per cent.

It must be remembered that Colonel Forsee's patients have been mostly young males without other serious disease (Fitzsimmons Army Hospital). In one category tabulated none was over 40 years of age. Also routine chest x-raying in the military service, with hospitalization immediately upon diagnosis, brought his patients under treatment relatively early. It is not to be expected, therefore, that all chest surgeons, no matter how able, can duplicate the author's results. Nevertheless, he has shown that amazingly good results can be obtained under ideal conditions.

JOHN H. KORNS

Manual for Cancer Programs—The Committee on Cancer. Chicago, Ill.: American College of Surgeons (40 East Erie St.), 1953. 38 pp.

Last year the Committee on Cancer recommended to the Board of Regents, American College of Surgeons, the revision of minimum requirements for the approval of cancer diagnostic and therapeutic facilities, as well as certain changes in terminology. The recommendations were duly approved and are now incorporated in this manual.

The principal innovation appears in the requirement that a Cancer Registry be established in every general hospital seeking approval of its cancer facilities; such registry shall include all classes of private as well as charity patients who have malignancy in any form. Another departure, which may come as a surprise to some, the term "clinic" has been dropped from the vocabulary in the manual and in its place reference is made to cancer clinical activities, i.e., cancer consultation service or cancer consultation and treatment service.

The text of the manual is arranged under the chapter headings of: Committee on Cancer, Cancer Registry, Cancer Clinical Activities; a comprehensive appendix follows the text and includes: a chart which depicts Organizational Plan for Cancer Clinics, list of diseases to be reported to the cancer registry, a series of suggested cancer report and summary forms and special letters which may be used by those concerned with the statistical and clinical programs in the cancer facilities.

Included is a discussion of a Standardized Method for Reporting Cancer End Results and a list of members of the joint committee which developed the rules for reporting end results. The joint committee was composed of representatives of the American College of Surgeons, College of American Pathologists, American College of Radiology, American Cancer Society, and the Public Health Service.

All who are concerned with cancer programs in official and voluntary health agencies, and all physicians who deal with cancer in hospitals and other clinical facilities will do well to familiarize themselves with the full content of this manual. LEONID S. SNEGIREFF

Books Received

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

ADMINISTRATIVE MEDICINE. TRANSACTIONS OF THE SECOND CONFERENCE DECEMBER 8–10, 1953. Packanack Lake, N. J.: Josiah Macy, Jr. Foundation, 1954. 164 pp. Price, $3.00.

AIR POLLUTION—A BIBLIOGRAPHY. S. J. Davenport and G. G. Morgis. Washington, D. C.: Gov. Ptg. Office, 1954. 448 pp. Price, $1.75 paper cover.

AMERICA'S RESOURCES OF SPECIALIZED TALENT. THE REPORT OF THE COMMISSION ON HUMAN RESOURCES AND ADVANCED TRAINING. Prepared by Dael Wolfle, Director. New York: Harper, 1954. 332 pp. Price, $4.00.

BABIES ARE HUMAN BEINGS. C. Anderson Aldrich and Mary M. Aldrich (2nd ed.). New York: Macmillan, 1954. 122 pp. Price, $2.95.

BIOCHEMICAL DETERMINANTS OF MICROBIAL DISEASES. Rene J. Dubos. Cambridge, Mass.: Harvard University Press, 1954. 152 pp. Price, $3.50.

COMMITTEE COMMON SENSE. Audrey R. and Harleigh B. Trecker. New York: Morrow, 1954. 158 pp. Price, $2.50.

EMERGENCY MEDICAL SERVICES:

GUIDE FOR MEDICAL AIDES IN AID STATIONS. 99 pp.

INSTRUCTOR'S PLAN BOOK FOR MEDICAL AIDES IN AID STATIONS. 115 pp.

GUIDE FOR NURSES. 64 pp.

TRAINING PLAN AND TEACHING SUPPLEMENT TO GUIDE FOR NURSES. 36 pp.

GUIDE FOR VENIPUNCTURE AND INTRAVENOUS THERAPY. 40 pp.

Albany, N. Y.: New York State Department of Health for the New York State Civil Defense Commission, 1954.

ESSENTIALS OF PEDIATRICS. Philip C. Jeans; F. Howell Wright; and Florence G. Blake (5th ed.). Philadelphia, Pa.: Lippincott, 1954. 808 pp. Price, $4.75.

FACTORS AFFECTING THE COSTS OF HOSPITAL CARE. FINANCING HOSPITAL CARE IN THE UNITED STATES. Vol. I. Edited by John H. Hayes. New York: Blakiston, 1954. 299 pp. Price, $4.00.

GERIATRIC NURSING. Kathleen Newton (2nd ed.). St. Louis: Mosby, 1954. 424 pp. Price, $4.75.

GUIDE TO FILM SERVICES OF NATIONAL ASSOCIATIONS. Series Number Two. Forrest Alter, et al. Evanston, Ill.: Film Council of America, 1954. 146 pp. Price, $2.00.

HEALTH FOR BETTER LIVING:

GROWING YOUR WAY. 255 pp. Price, $1.80.

KEEPING HEALTHY AND STRONG. 288 pp. Price, $1.92.

TEAMWORK FOR HEALTH. 327 pp. Price, $2.04.

Grace T. Hallock and Ross L. Allen. Boston, Mass.: Ginn, 1954.

HEALTH MANPOWER SOURCE BOOK. SECTION 5 INDUSTRY AND OCCUPATION DATA. Public Health Service Publication No. 263. Washington, D. C.: Gov. Ptg. Office, 1954. 215 pp. Price, $1.00.

HOUSING REHABILITATION. AN ADMINISTRATIVE GUIDE FOR COMMUNITY ACTION. Boston, Mass.: Division of Sanitary Engineering, Massachusetts Department of Public Health, 1954. 34 pp.

HOW TO KEEP ROMANCE IN YOUR MARRIAGE. W. Clark Elizey. New York: Association Press, 1954. 182 pp. Price, $2.95.

ILLUSTRATED HANDBOOK OF CHILD CARE—FROM BIRTH TO SIX YEARS. Wava McCullough. New York: McGraw-Hill, 1954. 231 pp. Price, $3.00.

LIVER INJURY. Edited by F. W. Hoffbauer. Packanack Lake, N. J.: Josiah Macy, Jr. Foundation, 1954. 231 pp. Price, $4.25.

MEREDITH'S HYGIENE. Arthur F. Davis and Warren H. Southworth (5th ed.). New York: Blakiston, 1954. 906 pp. Price, $6.00.

PRACTICAL PHYSIOLOGICAL CHEMISTRY. Philip B. Hawk; Bernard L. Ower; and William H. Summerson (13th ed.). New York: Blakiston, 1954. 1439 pp. Price, $12.00.

PRACTICE OF SANITATION. Edward Scott Hopkins and Wilmer Henry Schulze (2nd ed.). Baltimore, Md.: Williams & Wilkins, 1954. 466 pp. Price, $8.00.

RABIES—BULLETIN OF THE WORLD HEALTH ORGANIZATION (10:703–866). New York: Columbia University Press, 1954. Price, $1.50.

ROBERTS' NUTRITION WORK WITH CHILDREN. Ethel Austin Martin. Chicago, Ill.: University of Chicago Press, 1954. 527 pp. Price, $7.50.

SCOURGE OF THE SWASTIKA, THE. Lord Russell of Liverpool. New York: Philosophical Library, 1954. 259 pp. Price, $4.50.

SIXTY YEARS OF 16 MM FILM 1923–1983. A SYMPOSIUM. Series Number One. Forrest

Alter, et al. Evanston, Ill.: Film Council of America, 1954. 220 pp. Price, $2.00.

SOCIOLOGY. Jessie Bernard and Deborah MacLurg Jensen (4th ed.). St. Louis, Mo.: Mosby, 1954. 427 pp. Price, $5.00.

SOCIAL WORK PRACTICE IN THE FIELD OF TUBERCULOSIS. SYMPOSIUM PROCEEDINGS, JULY 27–AUGUST 1, 1953. Edited by Eleanor E. Cockerill. Pittsburgh, Pa.: University of Pittsburgh Press, 1954. 223 pp. Price, $3.50.

SYMPOSIUM ON PROBLEMS OF GERONTOLOGY. Johns Hopkins University School of Hygiene and Public Health and the National Vitamin Foundation, Inc., New York, N. Y., March 2, 1954. F. H. Bethell, et al. New York: National Vitamin Foundation, 1954. 141 pp. Price, $2.50.

SYPHILIS—BULLETIN OF THE WORLD HEALTH ORGANIZATION (10:501–702). New York: Columbia University Press, 1954. Price, $1.50.

TEEN-AGERS. Gladys Jenkins; William Bauer; and Helen Shacter. Chicago, Ill.: Scott, Foresman, 1954. 288 pp. Price, $3.60.

UNIVERSITY EDUCATION FOR ADMINISTRATION IN HOSPITALS. A REPORT OF THE COMMISSION ON UNIVERSITY EDUCATION IN HOSPITAL ADMINISTRATION 1954. Washington, D. C.: American Council on Education, 1954. 199 pp. Price, $3.00.

VITAMINS, THE. VOL. II—CHEMISTRY, PHYSIOLOGY, PATHOLOGY. Edited by W. H. Sebrell, Jr., and Robert S. Harris. New York: Academic Press, 1954. 766 pp. Price, $16.50.

WHAT IS ELECTROSHOCK THERAPY? QUESTION-AND-ANSWER SURVEY. Edward F. Kerman. New York: Exposition Press, 1954. 152 pp. Price, $3.50.

Interim American Board of Occupational Medicine

The Interim American Board of Occupational Medicine is presently negotiating with the American Board of Preventive Medicine relative to the grouping of Occupational Medicine with other nationally recognized professional specialties in the general field of preventive medicine.

For purposes of organization, it is desirable to know the number of candidates likely to apply for certification in Occupational Medicine under such auspices. Interested physicians are invited to communicate with Carl M. Peterson, M.D., Secretary, Interim American Board of Occupational Medicine, 535 North Dearborn St., Chicago 10, Ill.

Application forms and other essential information will be sent to inquirers as negotiations proceed. Full instructions will include regulations governing basic eligibility, admission to certification without examination, examination procedure, fees, and other details.

Prompt response will be appreciated.

A Selected Public Health Bibliography with Annotations

"So Much to Do for So Little"—News-type coverage of the Annual Meeting of the Southern Branch of the APHA offers eloquent evidence of the variety and importance of the papers and discussions presented there. It would be futile and unfair to attempt any "highlighting" here. The record is rich in suggestions for meeting-program planners everywhere.

ANON. APHA Southern Branch Conference Report. Pub. Health Rep. 69, 9:841 (Sept.), 1954.

And Deliver Us From—Complacency—"Throughout the country much can still be done not only to reduce further childhood mortality but also to aid the millions of youngsters handicapped by orthopedic defects, impaired sight or hearing, cerebral palsy, epilepsy, or emotional disturbances."

ANON. Health of School Age Children. Statist. Bull. Metrop. Life Insur. Co. 35, 8:1 (Aug.), 1954.

Concerning a Current Enthusiasm—As a means of influencing behavior, "we must admit that group forces are likely to be dangerous and should be used sparingly like dangerous drugs. On the other hand, we know that these influences do exist and we cannot abolish the group." The quotation is from a challenging discussion of the use and abuse of the group manipulative technics.

BACK, K. W. Group Addiction—Its Cause and Cure. Adult Leadership 3, 4:8 (Oct.), 1954.

Attenuated Virus Vaccines—The purpose of the paper is "to review a mighty weapon we now possess—namely, living modified viruses as immunizing vaccines," and very satisfactorily is the purpose served! At least 13 viral agents are now being used as attenuated vaccines in human or veterinary medicine. Seven more are still in the experimental stages. Difficulties encountered in the researches concerned with an attenuated polio vaccine are related in absorbing detail.

COX, H. R. Living Modified Viruses as Immunizing Agents. Brit. M. J. 4882:259 (July 31), 1954.

Hospital Reaches Out—At the end of its first calendar year this (Seattle) hospital extension service had cared for 126 patients who did as well in their homes as they would have in the hospital—and liked it better that way! Now the extension service is growing so rapidly that additional medical and social service staffs are needed to supplement the home care contributed by the visiting nurse service.

CROSS, H. Hospital Service Can Be Extended. Am. J. Nursing 54, 9:1127 (Sept.), 1954.

When Capillaries Kick Up—Though it may seem a strange source of technical information for professional health workers, your attention is directed to Harpers Magazine for a revealing discussion about shock. Most of us talk pretty glibly about the condition, especially when pontificating about first aid, but how much do we really know about shock? Well, here you will read a revealing account of the findings of current research in that area. Incidentally, the paper is also a one-lesson course in writing for the informed laity. For either reason you will be glad you read the account.

ENGEL, L. Shock: The Herald of Death. Harpers Magazine 209, 1252:57 (Sept.), 1954.

Public Health Side Line?—Accepting industrial recreation programs as established practice, what can management do to limit the carnage that often accompanies efforts to better employee relations through that channel? The nine answers the writer offers cover a wide range—from leadership to research.

FELTON, J. S. Recreation Programs in Industry: Health Asset or Liability? Indust. Med. & Surg. 23, 9:383 (Sept.), 1954.

Who Paid for Polio Care?—In Des Moines (1952) there were 288 hospitalized cases of polio in 110 families, of which 40 per cent utilized special polio insurance, 20 per cent health and accident, and 36 per cent Blue Cross. NFIP took care of the uninsured and helped out those who were underinsured by the Blue Cross and health and accident coverages.

GELPERIN, A. Hospital Insurance Against Poliomyelitis in Des Moines, Iowa, 1952. Pub. Health Rep. 69, 9:818 (Sept.), 1954.

Paying for Our (Omission) Sins—Ways in which more than $600,000 were spent for tuberculosis (in 1952) should provide you with the text for a rousing sermon on the relative values of that "ounce of prevention and the pound of cure." This is no freewheeling estimate of loss of earnings and money value of lives sacrificed and that sort of thing; instead, it is a detailed counting up of the hard-earned dollars that went down the tuberculosis drain two years ago. Oh, yes, about fifty of the six hundred thousands were invested in control measures.

GITLIN, J. N. Tuberculosis Expenditures in in the Fiscal Year 1952 for the United States and Territories. Pub. Health Rep. 69, 9:797 (Sept.), 1954.

Grown People Catch Diphtheria—A diphtheria-tetanus toxoid combination without alum adjuvant is recommended for adult immunization. Booster doses can be given at intervals of from 5 to 10 years and at times of known exposure to either disease, or before travel to many foreign countries.

IPSEN, J. Immunization of Adults Against Diphtheria and Tetanus. New England J. Med. 251, 12:459 (Sept. 16), 1954.

Professional Education (Wholesale Division)—In Russia there are 63 medical, 4 dental, and 8 pharmaceutical "institutes" (schools) into which 26,000 new students are admitted each year. In addition there are 600 schools for the training of nurses, midwives, "feldshers," dental assistants, and dispensers which take in an untold number of auxiliaries. Concludes the writer: "The Soviet Government pays great attention to medical education, since the satisfactory solution of the problem of training ultimately determines the success of all the work of the health services."

KURASHOV, S. V. Medical Education in the Soviet Union. Brit. M. J. 4886:510 (Aug. 28), 1954.

Walls to Be Blown Down—A Rural Life Council studies (southern) rural peoples' attitudes toward health, illness, and childbirth. Findings accentuate the need for effective two-way communication (now nonexistent) between those who require and those who provide health services—which is an elegant way of pronouncing "health education."

NEAL, E. F. Health Is What You Think It Is. Nursing Outlook, 2, 9:479 (Sept.), 1954.

And Still No Bad Effects—Another communication from the now classic Newburgh-Kingston fluoridation demonstration ends with these unequivocal words, "the present report confirms earlier findings that, apart from the known dental benefits, water fluoridation has no demonstrable systemic or developmental effect on children."

OVERTON, D. E., and CHASE, H. C. Newburgh-Kingston Caries Fluorine Study. New

York State J. Med. 54, 172:2452 (Sept. 1), 1954.

Public Health vs. Chronic Disease—In 1952 half a million families spent between half, or all, the family income on medical care, and another half million incurred medical expenses exceeding the family income. "Unless the burden of such expenses can be shared—or lightened through research—this vast tragedy will increase with the years." What is to be done about chronic disease is the burden of this scholarly address.

PARRAN, T. New Paths to a Growing Problem. New England J. Med. 251, 8:288 (Aug. 19), 1954.

Frailty, Thy Name Is—?—Speculating upon the phenomenon of the failure of death rates among men to decline as readily as they do for women, the writer comments: "the native frailty and fragility of the male cannot be the sole cause for the higher mortality." He hopes that the search for other possible causes, especially among middle-aged or older men, may be pressed more vigorously than it is now.

SOWDER, W. T. Why Is the Sex Difference in Mortality Increasing? Pub. Health Rep. 69, 9:860 (Sept.), 1954.

All About Polio—Three of a series of six papers will be of special interest to us in the health field. One predicts the availability of practical, confirmatory tests that will put an end to clinical diagnoses of nonparalytic cases through "guilt by association." The second discusses vaccination with killed and attenuated vaccines. Despite the press and the movies, there is no "official vaccine" as yet. The third concludes that gamma globulin is more effective than it appeared at first to be.

WELLER, T. H. Advances in the Laboratory Diagnosis of Poliomyelitis; PAUL, J. R. Practical and Theoretical Considerations with Regard to Vaccination in Poliomyelitis; (and) HAMMON, W. McD., et al. Evaluation of Red Cross Gamma Globulin as a Prophylactic Agent for Poliomyelitis. J.A.M.A. 156, 1:16 (Sept. 4), 1954.

Health Center—Predicted here are the ways that hospitals and health departments will work together in the health promoting social services that will feature the community health administration of the future.

WILINSKY, C. F. The Relation of Hospitals and Health Departments in Tomorrow's World. New England J. Med. 251, 9:324 (Aug. 26), 1954.

If additional information is desired regarding the articles listed in this Bibliography, please communicate directly with the publications in which they appeared; the addresses are furnished for your convenience.

Adult Leadership, Adult Education Association of the United States, 743 N. Wabash Ave., Chicago 11, Ill.

Am. J. Nursing (American Journal of Nursing), 2 Park Ave., New York 16, N. Y.

Brit. M. J. (British Medical Journal), British Medical Association House, 19 Tavistock Sq., London, W.C. 1, England.

Harpers Magazine, 49 E. 33 St., New York, N. Y.

Indust. Med. & Surg. (Industrial Medicine and Surgery), 605 N. Michigan Ave., Chicago, Ill.

J.A.M.A. (Journal of the American Medical Association), 535 N. Dearborn St., Chicago, Ill.

New England J. Med. (New England Journal of Medicine), Massachusetts Medical Society, 8 The Fenway, Boston 15, Mass.

Nursing Outlook, American Journal of Nursing Company, 2 Park Ave., New York 16, N. Y.

Pub. Health Rep. (Public Health Reports), Superintendent of Documents, Gov. Ptg. Office, Washington, D. C.

Statist. Bull. Metrop. Life Insur. Co. (Statistical Bulletin Metropolitan Life Insurance Company), One Madison Avenue, New York 10, N. Y.

Association News

OFFICERS, 1954–1955

President—Herman E. Hilleboe, M.D., Albany, N. Y.
President-Elect—Ira V. Hiscock, Sc.D., New Haven, Conn.
Vice-President—Athemas Bellerive, M.D., Port-au-Prince, Haiti
Vice-President—Allan R. Morton, M.D., Halifax, Nova Scotia
Vice-President—Huntington Williams, M.D., Baltimore, Md.
Treasurer—Charles Glen King, Ph.D., New York, N. Y.
Chairman of Executive Board—Roy J. Morton, C.E., Oak Ridge, Tenn.
Executive Secretary—Reginald M. Atwater, M.D., New York, N. Y.

DR. HILLEBOE IS APHA PRESIDENT

HERMAN E. HILLEBOE, M.D., M.P.H.

Herman Ertresvaag Hilleboe, M.D., M.P.H., since 1947 commissioner of health of the State of New York, has become president of the American Public Health Association after having been chosen president-elect at the Annual Meeting in October, 1953.

A native of Westhope, N. D., Dr. Hilleboe received the degrees of bachelor of science in 1927 and bachelor of medicine in 1929 from the University of Minnesota. He received his M.D. degree from the Minnesota Medical School in December, 1931. From June, 1929, until December, 1930, he was a general practitioner in rural Minnesota at Swanville.

In 1932 he began graduate training in pediatrics on a Rockefeller fellowship. After graduate training in public health at the Johns Hopkins School of Hygiene and Public Health, he received his M.P.H. degree. He is certified as a specialist by the American Board of Preventive Medicine.

From 1935 to 1939 Dr. Hilleboe spent full time in public health as chief of the Tuberculosis and Crippled Children's Programs of the Minnesota State Division of Social Welfare.

In June, 1939, he was commissioned as a senior assistant surgeon in the regular corps of the Public Health Service. At the request of Governor Harold E. Stassen of Minnesota he was granted leave to continue on duty in the Division of Social Welfare as chief of the Medical Unit.

During the fall of 1939 he made special studies on tuberculosis for the Public Health Service in the Scandinavian countries, England, Germany, and France. Joint research studies in International Tuberculosis Control were started at this time in cooperation with Dr. Johannes Holm of the State Serum Institute at Copenhagen and have been

continued since then in Denmark and the United States.

In January, 1942, Dr. Hilleboe was called to active duty in the Public Health Service in Washington, D. C., to carry on tuberculosis control work among industrial workers throughout the country. He also was assigned to the U. S. Coast Guard as chief tuberculosis control officer for the duration of the war.

He was appointed by the Surgeon General in 1944 as the first chief of the newly created Division of Tuberculosis Control in the Public Health Service, and in November, 1946, he was promoted to the position of associate chief of the Bureau of State Services with the rank of Assistant Surgeon General. In this position, he supervised the Divisions of Hospital Survey and Construction and Tuberculosis Control.

In 1947 Governor Thomas E. Dewey of the State of New York asked the Public Health Service to give Dr. Hilleboe leave of absence to permit him to head the New York State Health Department where he serves as commissioner of health at the present. He is also a professor of public health and preventive medicine at Albany Medical College, Albany, N. Y., and associate professor at Columbia University School of Public Health in New York City. In his capacity as commissioner of health he acts as the chairman of the Interdepartmental Health Council, chairman of the Joint Hospital Survey and Planning Commission, member of the Youth Commission, the Mental Health Commission, and the Public Health Council of New York State.

He is a member of the Cancer Control Advisory Committee to the National Cancer Institute and the Advisory Committee to the Chronic Disease and Tuberculosis Division of the Public Health Service. He is chairman of the Federal-State Relations Committee of the Association of State and Territorial Health Officers, and a member of the Expert Advisory Panel on Tuberculosis for the World Health Organization. He is a member of the Board of Consultants for Medicine and Public Health of the Rockefeller Foundation and the Technical Board of the Milbank Memorial Fund.

He is a member of the Health Committee of the Commission on Intergovernmental Relations, under the chairmanship of Meyer Kestnbaum.

In October, 1951, Dr. Hilleboe was presented with the outstanding Achievement Award of the University of Minnesota which is reserved for former students of the institution who have attained high eminence and distinction. In June, 1953, Dr. Hilleboe was awarded an honorary degree of doctor of science by the University of Rochester, Rochester, N. Y.

Dr. Hilleboe is a co-author with Dr. Russell H. Morgan of the book "Mass Radiography of the Chest." He is the author of more than 150 publications in medical literature.

In 1929 Dr. Hilleboe married Alida Claire Champeau of Red Lake Falls, Minn. They have three children, Mrs. Joyce Hilleboe Kiaer of Copenhagen, Denmark, Theresa-Ann, a student at Bouve-Boston School of Physical Therapy, Boston, Mass., and Herman E. Hilleboe, Jr. Their home is at 25 Pinedale Ave., Delmar, N. Y.

Professor Winslow Retires as Editor

The Editorial Board of the American Journal of Public Health and the Executive Board received in September a resignation as editor of the Journal from Professor C.-E. A. Winslow for health reasons. John D. Porterfield, M.D., chairman of the Editorial Board, expressed the feeling of the board at the Buffalo Annual Meeting when he said that all who have known the Journal under the inspiring editorship of Professor Winslow since April, 1944, will

share the keen regret which both boards feel of the necessity for this decision of Professor Winslow's.

The resignation has been accepted with great regret, effective October 31, 1954. Resolutions of appreciation have been adopted by the Editorial Board and by the Executive Board. An editorial in the current issue summarizes Professor Winslow's extraordinary contributions.

The Editorial Board, with the concurrence of the Executive Board, announces the appointment of Professor Abel Wolman of Johns Hopkins University, Baltimore, Md., as editor. With Dr. Wolman there will be associated Raymond S. Patterson, Ph.D., as associate editor in charge of manuscripts. The Editorial Board is confident that the new arrangement will maintain the high standards of the Journal. Dr. Wolman assumed his new duties as of November 1. All communications regarding the Journal should be addressed for the attention of the Managing Editor, 1790 Broadway, New York 19, N. Y.

Child Health Supervision Manual

The newest of the Association's publications, "Health Supervision of Young Children," is expected off the press in late December. This is the first in a series of 12 publications prepared by the Committee on Child Health, whose chairman is Samuel Wishik, M.D. This manual is designed as a comprehensive guide to desirable standards and practices "in health programs for infants and preschool age children." The American Academy of Pediatrics and the U. S. Children's Bureau have endorsed the manual.

In two parts, the manual first defines what health supervision is, whether carried on by the private physician or elsewhere, and then how the child health conference carries out child health supervision. Changing concepts in child health care are reflected in considering the mental health aspect of private and public health practice as an integral part of practice as a whole.

The other 11 manuals in the series will deal with handicapped children and represent the first effort by any national agency to develop a series of guides for comprehensive community-wide programs for handicapped children. A general manual is in preparation as well as one on each of 10 specific handicaps—Cerebral Palsy, Cleft Lip and Cleft Palate, Dento-Facial-Defects, Hearing Impairment, Visual Problems, Diabetes, Emotionally Disturbed Children, Epilepsy, and Heart Disease and Rheumatic Fever. Each will have the participation and endorsement of the appropriate agency or agencies in the field of work covered.

"Health Supervision of Young Children" will be available from the American Public Health Association, 1790 Broadway, New York 19; $2.

News of Affiliated Societies

Pennsylvania—At the annual meeting of the Pennsylvania Public Health Association in August, Harry S. Mustard, M.D., executive director of the State Charities Aid Association, was among the speakers. He congratulated Pennsylvania upon its developing modern public health organization, the School of Public Health at the University of Pittsburgh, and the vitality of its voluntary health movement.

The association's annual award was presented to Russell E. Teague, M.D., the state's secretary of health, "for his outstanding contribution to public health in Pennsylvania."

The following officers were elected:

President—J. Thomas Millington, Jr., M.D., director of preventive services, State Department of Health, Harrisburg
President-Elect—R. Winfield Smith, executive

director, Pennsylvania Tuberculosis and Health Society, Philadelphia
Vice-President—Milton Nicholson, D.D.S., associate professor, public health dentistry, University of Pittsburgh
Secretary-Treasurer—Robert H. Conn (re-elected), acting chief, Division of Community Health, State Department of Health.

Colorado—At the meeting of the Colorado Public Health Association held in Estes Park, June 10 and 11, it was reported that the association had a total of 460 paid-up members. The following officers were elected:

President—John A. Brown, El Paso County Health Department
President-Elect—R. K. Anderson, D.V.M., Denver Department of Health
Vice-President—Cecilia Gillespie, Adams-Arapahoe-Jefferson Counties Health Department
Secretary—Arguyle Seikel, executive director, Colorado Heart Association
Treasurer—Helen Mason, medical social consultant, Preventive Medical Services, State Health Department.

The meeting also established a Health Education Section, whose officers are:

Chairman—Constance L. Bancroft
Vice-Chairman—Muriel Sorby
Secretary—Reginald Brown
Council Members—Levitte Mendel, Neven Kilpatrick.

APHA membership application blank on page XXXVII

EMPLOYMENT SERVICE

The following pages present information for those seeking public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

POSITIONS AVAILABLE

Director of Division of Local Health Services—Vacancy in Kentucky for important and challenging position. $11,250. Bruce Underwood, M.D., Commissioner, Kentucky State Department of Health, 620 South Third St., Louisville 2, Ky.

Medical Officer—Licensed M.D. to provide general medical attention for about 300 Aleut residents and employees of the United States Fish and Wildlife Service on the Pribilof Islands, Alaska, in connection with the government-operated fur-seal industry. $8,800 per annum; nominal charges for furnished and heated residence; store supplies at Seattle prices. Travel and transportation expenses paid by the government on 15-month duty tour. For additional information write: Director, Fish and Wildlife Service, Department of the Interior, Washington 25, D. C.

Public Health Physician—to direct the Crippled Children Program of the New Jersey State Department of Health. Should have M.P.H. or be Pediatrics Board eligible. $7,200–$8,700 with promotion possibilities to Senior rating $8,340–$10,440. Geoffrey W. Esty, M.D., Director, Division of Constructive Health, New Jersey State Dept. of Health, Trenton, N. J.

Director of District Health Services—Los Angeles City Health Department. $10,104–$12,576, plus travel and retirement provisions. Must have or be eligible for medical license in California. Graduate training or extensive public health experience required. Board certification desirable. George M. Uhl, M.D., Health Officer, 116 Temple St., Los Angeles 12, Calif.

Public Health Physician — Preferably board certified; epidemiology and child health; start at $10,800, plus car.

Public Health Dentist—M.P.H. or equivalent; four years' experience; start at $9,120, plus car allowance. M. B. Bethel, M.D., 615 E. Fourth St., Charlotte 2, N. C.

Director, Student Health Services—Also will teach principles of public health in school of nursing. Close working arrangements with county and state health departments. Eligibility for Wyoming medical license required. Experience in public health desired. About $10,000. Dr. G. D. Humphrey, President, University of Wyoming, Laramie, Wyo.

Dental Hygienist—$2,800–$3,100. Appointment may be made above the minimum. Yonkers Department of Public Health. Assigned to parochial schools of Yonkers. Ralph F. Sikes, M.D., Commissioner of Health, Yonkers 2, N. Y.

Public Health Bacteriologist—California licensed for county health department. Applicants must be between 21–54; have degree from accredited four-year college with premedical specialization, preferably bacteriology. Experience: Six months as Junior Public Health Bacteriologist in a public health laboratory or one year in clinical or hospital laboratory approved by state public health department for training in public health bacteriology. $311–$378. San Diego County Civil Service, 402 Civic Center, San Diego, Calif.

Sanitarians—An expanding program. College graduation with science major required. $275–$415. Merit System Supervisor. Box 939, Santa Fe, New Mexico.

Sanitarians—for housing rehabilitation. Beginning salary $4,350; in three annual increments to $4,730; allowance for uniforms. Applicants must be college graduates or have two years of college training with major emphasis on the physical sciences with at least three years' experience involving the use of physical science technics. The city expects to set up a staff of inspectors to do work in conserving and rehabilitating houses in run down areas. Civil service status. Milwaukee City Service Commission, City Hall, Milwaukee, Wis.

Chief Sanitarian—Require three years' experience and M.P.H. Sanitation staff of three. $383–$420. Frank Juskiewicz, Director Northeast Colorado Health Dept., Sterling, Colo.

Public Health Statistician—to develop expanded disease and program statistical service. Various combinations of education and experience acceptable. $440–$550.

Speech Correctionist—two positions at Cerebral Palsy Center, Billings, Mont. Bachelor's degree with clinical membership or eligibility for membership in the American Speech and Hearing Association, plus one year of internship or employment experience. $310–$385. Appointment may be made above the minimum salary step.

Medical Social Consultant—Opportunity to develop program of medical social service in crippled children and cerebral palsy programs. Graduate training in medical social or social casework, plus four years' experience. $355–$440. Appointment may be made above the minimum salary step. G. D. Carlyle Thompson, M.D., Executive Officer, State Board of Health, Helena, Mont.

Public Health Statistician—New position to organize and direct statistical activities in large city health department. B.S. and M.P.H., with emphasis on public health statistics. Recent experience in supervisory capacity in public health program desirable. $509–$564. Department of Personnel, Room 235, Municipal Courts Bldg., St. Louis 3, Mo.

Health Educator — Monterey County Health Department. $4,104–$5,076. State retirement plan. M.P.H. required. Preferably experienced. Must have car, travel compensation according to mileage. N. W. Husband, M.D., Director of Public Health, 154 West Alisal St., Salinas, Calif.

Public Health Educator—for an official agency in an urban area serving 62,000 people in the East. Includes appointment to school of public health with responsibilities in field training and teaching. Requirements: M.P.H. and three or more years experience in community health education. Salary based upon preparation for position. **Box HE-63,** Employment Service, APHA.

Public Health Educator—$4,600–$5,250. Must have a bachelor's degree with a major in education, biological science, or other equivalent fields and a master's degree in public health education or other appropriate field. Civil service status and pension protection. Milwaukee City Service Commission, City Hall, Milwaukee, Wis.

Health Educator—Demonstration health center, voluntary agency in process of expansion, cooperating closely with Philadelphia Department of Public Health. $6,500. M.P.H. or master's required, plus at least three years of experience in official or voluntary health agency. Opportunity for participation in medical student teaching program. Application form on request. Bernard M. Blum, M.D., Director, Fife-Hamill Memorial Health Center, 7th and Delancey Sts., Philadelphia 6, Pa.

Public Health Nurses—with public health nursing training. Generalized program, including school nursing, at university field training center. $338–$412. County car or mileage. Nursing Director, Kern County Health Dept., P. O. Box 997, Bakersfield, Calif.

Director of Nursing—to serve with the Schoharie County Health Department. Present vacancy. Also openings for staff nurses. Ward L. Oliver, M.D., Commissioner of Health, Schoharie County Department of Health, Schoharie, N. Y.

Senior Public Health Nurse—B.S. degree and completion of course of study in public health nursing and one year of experience in generalized public health nursing under supervision. $4,092–$4,980. Merced County Personnel Department, Courts Bldg., Merced, Calif.

Tuberculosis Nursing Consultant—Immediate opening for California State Department of Public Health (Berkeley); extensive traveling throughout California. Requires college training in public health nursing with four months' specialized study in tuberculosis nursing; four years' recent experience as public health nurse, including two years in a generalized public health nursing program which had tuberculosis nursing. Must be eligible for license as a registered nurse and a certificate as a public health nurse in California. $395–$481 month. Mrs. Marguerite Morgan, Personnel Officer, Room 744, Phelan Bldg., 760 Market St., San Francisco 2, Calif.

Public Health Nurse Supervisor—$442–$536. College and nursing school graduate, with 30 seminar hours of public health nursing. Six years' experience, including two years in public health and two years' supervisory or consulting experience. Headquarters: Reno, Nev. State Personnel Department, Heroes Memorial Bldg., Carson City, Nev.

Director-Supervisor — for seven-nurse VNA in New York suburban area. Four-week vacation. Beginning salary up to $4,600, depending upon qualifications. Mrs. Herrick Brown, 7 Lotus Road, New Rochelle, N. Y.

Supervising Nurse—Up to $5,100. **Staff Nurses**—Up to $3,900. County health department in central Illinois. Generalized program. Sick leave accumulative up to 90 days; retirement plan. Director, McLean County Health Department, 318 E. Locust St., Bloomington, Ill.

POSITIONS WANTED

Public Health Dentist—Fifteen years' public health experience. At present in administrative position in dental bureau of a large state's health department. Desires position in public health or in dental teaching field. Preference for southern or southwestern part of United States. **Box D-13,** Employment Service, APHA.

Physician—M.P.H.; age 39. Desires position as assistant director in a chronic disease program. Interested in coordinating medical care services. Training and experience in internal medicine, pediatrics, epidemiology and communicable and chronic diseases, and rehabilitation in teaching institutions and state-wide programs. Diplomate of the National Boards of Medical Examiners. Locate anywhere. **Box Ph-48,** Employment Service, APHA.

Physician—virologist with 10 years' experience in tissue culture desires appointment. Publications, teaching experience. Draft exempt. Will consider employment on European continent. **Box Ph-50,** Employment Service, APHA.

Commercial Advertisements

All communications on the following commercial advertisements should be sent to Burneice Larson, Medical Bureau, Palmolive Building, Chicago 11, Ill.

OPPORTUNITIES AVAILABLE

(a) Medical director, county health department; metropolitan area, Midwest; minimum $12,000. (b) Public health physician, Diplomate or eligible, to serve as assistant director, important health organization; around $12,000; East. (c) Pediatrician or obstetrician with maternal and child health experience, public health engineer, and public health or medical statistician; school of public health being established by large university; foreign. (d) Public health physicians, nurses, health educators, and sanitarians; foreign assignments. (e) Senior public health nurses; Alaska. (f) Public health nursing supervisor in charge of nursing education; generalized public health nursing program; university city, Southwest; $4,500–$6,000. (g) Health educator; college town, California. (h) Statistician to serve as assistant or associate professor, university school of medicine. Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago.

OPPORTUNITIES WANTED

(a) Public health physician; M.P.H., Hopkins; Diplomate; seven years, director, metropolitan health department. (b) Public health nursing administrator; M.P.H.; five years, consultant, state health department, four years, health coordinator, liberal arts college. (c) Health educator; M.P.H.; nine years, director, health education, metropolitan health department. (d) Statistician; M.B.P.H. (public health statistician); six years, statistician, state health department. (e) Sanitary engineer; B.S.; six years, sanitary engineer state department of health. Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago.

News from the Field

WHO NEWS

Southeast Asia Regional Committee

WHO's Regional Committee for Southeast Asia held its seventh session in New Delhi in September. In his opening address, Indian Prime Minister Jawaharlal Nehru stressed the importance of contributions made by WHO and other nonpolitical UN agencies in easing world tension. The meeting was also addressed by the Indian Minister of Health, Rajkumari Amrit Kaur, who urged larger funds for WHO, but noted with gratification "how much has been achieved even with the little made available."

The report of the regional director, Dr. Chandra Mani, reports the "vigorous forward movement" following complete independence by many of the Southeast Asia countries. Many countries have increased their national health budgets and undertaken a large variety of projects. Emphasis during the past year has been on sanitation, health education, and training of personnel. A total of 104 WHO fellowships were awarded in Southeast Asia during the past year. More than 2,000 health workers have been in WHO-assisted projects related to malaria, tuberculosis, venereal disease, yaws, and maternal and child health. During the year 24 projects were turned over to national management to be continued without international assistance.

Integrating Rural Health Programs

In September, 1953, WHO's Expert Committee on Public Health Administration held its second meeting. Its report now published, "Methodology of Planning an Integrated Health Program for Rural Areas," reflects the main topic under discussion. The report emphasizes both the need for local health units and the interrelation of other community planning "in agriculture, education, social betterment, and economic stability."

The report outlines seven basic services that should be provided by a local health unit—maternal and child health, communicable disease control, environmental sanitation, vital statistics, health education, public health nursing, and medical care. The report quotes the $1 per capita figure for a minimum basic service suggested in Local Health Units for the Nation by Haven Emerson, M.D., a figure now very much out of date.

Hugh R. Leavell, M.D., professor of public health practice, Harvard School of Public Health, and past president, American Public Health Association, was elected to serve as chairman of the second session of the Public Administration Expert Committee.

Health Education Expert Committee

The Fifth World Health Assembly in 1952 established an Expert Committee on Health Education of the Public. This committee met in Paris in December, 1953, to make "an introductory study of health education as an aspect of health work."

The First Report of the Expert Committee is now available in English in mimeograph form. It is actually a primer in the objectives and scope of health education, in the way people learn and the role of the educator in health programs, the broad principles of program planning, evaluation, and organization, the development and use of methods and media, and desirable training of personnel. An appendix gives actual illustrations of methods, media, and community organization.

Mayhew Derryberry, chief, Division of Public Health Education, Public Health Service, was reporter for the committee's meeting, and A. Helen Martikainen and Vivian V. Drenckhahn served on the secretariat. They were, respectively, chief of WHO's Section on Health Education of the Public, and regional adviser in Health Education of the Public, WHO's Regional Office for Europe.

Both Health Habits and the Three Rs

Late in 1952 a team from UNESCO started a demonstration school for boys in Iraq. The plan was to show how a rural area can benefit from an educational campaign to raise economic standards, increase literacy, and improve general living conditions including health conditions. Not only did the boys learn to read and write in three months, but their lives were revolutionized. They learned how to keep themselves clean and how to avoid sickness that comes from impure water. Concurrently with the school all kinds of activities went on. Since the most pressing need was for medical care a clinic was opened which was soon crowded with patients. Hundreds have been inoculated against smallpox and diphtheria; injections have been given to bilharziasis sufferers. Agricultural and home economics instruction have raised the level of nourishment. The boys themselves have planted a plot of wheat and barley, have raised a vegetable garden, built a chicken house as well as volley ball court and football field. Later a girls' school was started.

Says the report of this pilot project, "The most important feature of the whole program is the training of Iraqi personnel who can take over when UNESCO withdraws in 1956."

The project is written up in UNESCO's quarterly bulletin, "Fundamental and Adult Education," and is summarized in Press Feature No. 111 of the United Nations, Department of Public Information, Press & Publications Bureau, United Nations, N. Y.

What Causes Birth Malformations

The Florida State Board of Health, under a grant from the National Heart Institute, will for five years "probe deeper into the secrets of human beginnings." The study will attempt to determine what conditions affecting the health of the expectant mother in the early months of pregnancy are responsible for the birth of malformed children. In the first year, 500 expectant mothers are being studied with the expectation that 10,000 will be studied in the course of the five years. Offspring will be under observation for five years, also, in order to find congenital defects that may have been missed at birth.

The study is under the direction of S. D. Doff, M.D., director of the Division of Heart Disease Control in the Florida State Department of Health. Cooperating are a number of other agencies, including the Jacksonville Health Department, the State Bureau of Laboratories, and the Duval County Medical Center.

New Quarters for DuPage County

The DuPage County Health Department which formerly had its headquarters in Villa Park has moved into new air-conditioned and sound-proofed permanent quarters in Wheaton, Ill. (209 E. Liberty Drive). The health officer is E. L. Sederlin, M.D.

Transfer in Massachusetts

The Massachusetts Hospital School in Canton for handicapped children between the ages of four and 20 years who are mentally competent to attend public school has by act of the Legislature been

transferred from the State Department of Public Welfare to the Department of Public Health. The latter department reports that no change will be made in the basic policies and objectives of this half-century-old institution.

The school can care for about 150 children. It couples with expert medical and surgical treatment a complete vocational and rehabilitation program. This program is designed to "turn out citizens physically, psychologically, and educationally able to compete with their unhandicapped brothers and to lead normal productive lives."

"Human Biology" Under New Sponsor

"Human Biology," founded in 1929 by the late Raymond Pearl, is now published by the Wayne University Press. The editor is Gabriel Ward Lasker, assistant professor of anatomy, Wayne University College of Medicine. This 26-year-old quarterly will continue to be a "record of research," with special emphasis on the biometry and growth of man and the other primates. It also remains international in coverage, accepting articles from the entire world. In the first number under the new sponsorship (Vol. 26, No. 3 (Sept.), 1954), three of the six original articles come from abroad—one each from Africa, Asia, and Europe.

The September number of Human Biology is devoted to studies on man, with particular reference to growth and infant mortality, and features, also, a collection of papers on the nonhuman primates and human evolution. This issue is a memorial to the late Earnest Albert Hooton, for 40 years professor of physical anthropology at Harvard University, and contains an article by him.

The annual subscription rate continues to be $5. Wayne University Press, 4841 Cass Avenue, Detroit 1, Mich. Manuscripts for consideration should be sent to Dr. Gabriel Lasker, 1401 Rivard St., Detroit 7.

Standardizing Food Vitamin Assay

The International Vitamin Commission of five members has been organized under the auspices of the Food Division of the International Union of Pure and Applied Chemistry. Its purpose is to develop standardization in the vitamin assay of foods in various countries to facilitate international trade. The group will explore vitamin procedures specifically adapted to food products, but not medicinal vitamin preparations. The chairman of the commission is Professor E. Brunius of the National Public Health Institute of Stockholm. Bernard L. Oser, Ph.D., of the Food Research Laboratories, Long Island City, N. Y., is a member.

Extension Course in Pest Control

According to a June Service Letter of the National Pest Control Association, home study courses in entomology are offered at both the University of California and the University of Kansas. At the former, a course in structural pest control, with a fee of $20 is available. The latter offers three courses: introduction to insects, five-credit hours; household and garden insects and insects and public health, each two-credit hours. The fees are $6 per credit hour for Kansas residents and $9 for nonresidents. Further information, respectively, from Department of Correspondence Instruction, University Extension, University of California, Berkeley 4, and University of Kansas, University Extension, Lawrence.

Labor Union Dental Care Program

The News Letter of the American Dental Association reports a pilot dental care program in the San Francisco area organized by the International Longshoremen and Warehousemen's Union for its members' children. The union has allocated $750,000 from its welfare

fund for the program. The California State Dental Association's Committee on Dental Care was consulted in the planning of the program which is later to be extended to the Los Angeles area and the Pacific northwest.

Constructive Uses of Atomic Energy

The first anniversary of President Eisenhower's speech to the United Nations suggesting an international pool of atomic materials for peaceful purposes will be the occasion for a forum on "Constructive Uses of Atomic Energy." The forum, to be held December 8, 1954, at the United Nations, is being planned jointly by the State Department, the Atomic Energy Commission, and the Atomic Industrial Forum. Representation in the planning body is to be sought from organizations interested in the various aspects of atomic energy for peacetime purposes.

Atomic Industrial Forum is a nonprofit membership organization of industrial concerns, trade associations, technical societies, institutions of learning, and individuals. It has had two forums—one a special briefing for correspondents of foreign newspapers shortly after the President's suggestion for an international atomic pool was made and one on "Business Opportunities in Atomic Energy."

Six Honorary Fellows of the R.S.I.

The Royal Sanitary Institute announces that six well known international figures in the public health field have been made Honorary Fellows. They are:

Dr. Marcolino G. Candau, director-general, World Health Organization

Herbert M. Bosch, professor of public health, University of Minnesota

Dr. G. R. Coatney, Laboratory of Tropical Medicine, National Institutes of Health

Dr. Gordon M. Fair, professor of sanitary engineering, Harvard University

Dr. Hugh R. Leavell, Harvard University School of Public Health

Dr. Henry F. Vaughan, dean, School of Public Health, University of Michigan

Status of Venereal Disease Control

A formal statement calling attention of citizens and the federal government to the facts about the present status of venereal disease control has been released by three national organizations—the Association of State and Territorial Health Officers, the American Venereal Disease Association, and the American Social Hygiene Association. The statement includes five main points:

1. Analysis of the present situation reveals that complete control of VD is not imminent.
2. Syphilis and gonorrhea are no less important as public health problems now than they were ten years ago.
3. Because of reduced appropriations present needs and objectives are not being met.
4. An appropriate VD control program for the next several years is likely to require that federal, state, and local health administrators take specific steps, 10 of which are suggested.
5. Certain aspects of VD control remain a federal responsibility.

These five points are fully documented in the statement. For example, syphilis in the past year increased in 15 states, the District of Columbia, and 14 major cities; gonorrhea in 17 states, the District of Columbia, and 24 major cities.

The statement urges the federal government to resume responsibility for VD control, to maintain a VD budget of $10,000,000 annually until Congress has studied needs and to reduce federal support only on a long-term plan, selectively and gradually, on the basis of local needs.

The entire statement appears in Social Hygiene News of March, 1954. American Social Hygiene Association, 1790 Broadway, New York 19, N. Y.

Trudeau Society Fellowships

The American Trudeau Society is offering a limited number of resident fel-

lowships in diseases of the chest to promote the training of clinicians, medical teachers, and administrators in the field of tuberculosis. Awards, made for graduate study in internal medicine with emphasis on diseases of the chest, are open to citizens of the United States for work in this country who have an M.D. degree and who are preferably under 30 years of age.

All awards are granted for one year, are determined by individual circumstances and are paid directly to the fellow on a monthly basis. The applicant may elect both the hospital in which to study and the staff member to supervise his work. Applications must be received by February 1, 1955. The Director of Medical Education, American Trudeau Society, the Henry Phipps Institute, 7th and Lombard Sts., Philadelphia 47, Pa.

Harvard Public Health Scholarships

The Harvard School of Public Health has awarded the first postgraduate scholarships in its 41-year history. Following an announcement early in 1954, (AJPH, 44, 4:438), 74 applications were received from which 14 were selected for scholarship aid. The group includes eight women and six men—four doctors, three each of nurses and nutritionists, two veterinarians, one dentist, and one technician. Four are from foreign countries—British West Africa, Great Britain, Hongkong, and Sweden.

The scholarships are reported to have been established following a survey that showed an acute lack of qualified public health specialists in the United States and other countries. It was further found that the lack of trained personnel was generally due to financial problems which make it necessary for medical school and other graduates to enter income-producing careers rather than entering on postgraduate training.

Gamma Globulin Control Eased

The Lederle Laboratories Division of the American Cyanamid Company announces that gamma globulin, for the prevention of paralytic polio, measles, and infectious hepatitis, is now available on doctors' prescriptions through regular medical supply channels. Heretofore the protective blood fraction has been allocated by the Federal Office of Defense Mobilization to local departments of health for use in polio epidemic areas only. The gamma globulin bears the official name assigned to it by the National Institutes of Health, Poliomyelitis Immune Globulin (Human).

Regulations for Nursing Homes

"Suggested Ordinance on Nursing, Convalescent, and Old Age Homes," published by the National Board of Fire Underwriters, brings up to date the original ordinance published in 1945. It is recommended for adoption by municipalities and as a basis for county and state regulations. Suggestions are made for regulation of the more important causes of loss of life due to fire, such as highly combustible interior walls and ceilings, unenclosed stairs and dumbwaiters, inadequate fire separation between parts of buildings, and lack of automatic sprinkler protection. Engineering Department, National Board of Fire Underwriters, 85 John St., New York 38, N. Y.; free.

Air Pollution Control

"Air Pollution Abatement Manual" is now available in complete form. Each of the 12 chapters was prepared by a separate group of experts and published as completed. Not only are various testing and laboratory methods discussed, but also such factors as legislative requirements, physiological effects, sampling procedures, and evaluation of

data. The final chapter, and one of the longest, is a bibliography. Manufacturing Chemists' Association, 1625 Eye St., N.W., Washington 6, D. C.; $6, with individual chapters at prices ranging from 15 to 75 cents.

Sampling Article in Spanish

The Inter-American Center of Biostatistics in Santiago, Chile, has requested and received permission to translate into Spanish the article "On the Use of Sampling in the Field of Public Health." This was published in the June, 1954, issue of the American Journal of Public Health. The article was prepared by the Committee on Sampling Techniques in Public Health Statistics of the Association's Statistics Section.

The translation was requested as being useful to the students at the center. The Inter-American Biostatistics Center was organized by the Chilean government in 1952, with the assistance of UN and WHO, to develop statistical records and methods related to health and social fields applicable to Latin American countries and to serve as a Latin American training center in vital and health statistics.

New England Health Institute

The 20th New England Health Institute was held in Burlington, Vt., on August 25–27, with the Vermont State Department as host. About 500 public health workers were registered.

Among the subjects discussed were recruitment of public health workers, food control in New England, community participation in meeting health needs, the public health aspects of nursing home licensing and total care in chronic illness. Robert E. Tumelty of the Office of Public Health Education, Vermont State Department of Health, was chairman of the program Planning Committee.

Charter for Medical Education Fund

President Eisenhower on August 29 signed into law a bill conferring a federal charter on the National Fund for Medical Education. The new law, sponsored by the late Senator Robert A. Taft of Ohio, gives federal status to the fund which since 1949 has been mobilizing private financial support for the nation's 80 medical schools. During the five years of its existence, the fund has allocated nearly $7,000,000 to the medical schools, about half of it coming from business corporations and half from the medical profession. The goal is $10,000,000 a year to bolster the medical schools' teaching budgets, nearly five times the 1954 grants.

Drinking Water Disinfection

In a six-page folded leaflet the Public Health Service outlines simple and practical methods for disinfection of drinking water. The leaflet is designed for the guidance of persons confronted with the problem of assuring themselves of safe drinking water when in areas of the world where the public water supply may be of doubtful purity. Drinking Water Disinfection: A Guide for the Individual. Supt. of Documents, Washington, D. C.; $2.50 per 100.

Medical Journalism College Courses

At the annual meeting of the American Medical Writers' Association, in Chicago in September, it was announced that the first four-year collegiate courses in medical journalism and writing leading to a bachelor's degree have now been started at two universities—the University of Illinois, Urbana, and the University of Missouri, Columbia. The Medical Writers' Association has established a Medical Journalism Scholarship Fund to provide several partial scholarships of $500 each for students in these courses. The fund was inaugurated by

the secretary of the Writers' Association, Harold D. Swanberg, M.D., who contributed $1,000 so that one scholarship might be immediately available in each university.

Private Sewage Disposal Systems

"Septic Tank Soil Absorption Systems for Dwellings," published by the Housing and Home Finance Agency, is an illustrated guide for the design and installation of individual sewage disposal systems. Suggestions are made for layouts under several different conditions of size and nature of dwelling, topography, and relationship to sewer areas. Supt. of Documents, Washington 25, D. C.; 25 cents.

Trudeau Society Invites Papers

The American Trudeau Society, the Medical Section of the National Tuberculosis Association, invites abstracts of papers for possible presentation at the society's 50th anniversary meeting in Milwaukee in May, 1955. Abstracts should be limited to a 300-word summary including important data and conclusions and should be accompanied by charts and tables. A Medical Sessions Committee will select papers for presentation on a competitive basis. Subjects may include all scientific aspects of tuberculosis and nontuberculous respiratory and cardiopulmonary diseases as well as the results of investigative work bearing on these diseases.

Abstracts should be submitted by January 1, 1955, and February 1 is the absolute deadline. Authors whose papers are selected will be notified by March 1. All papers presented will be published in the Annual Transactions of the National Tuberculosis Association and may be published in the American Review of Tuberculosis.

Further information with full copy of terms of invitation from Frank W. Webster, executive secretary, American Trudeau Society, 1790 Broadway, New York 19. Abstracts should be submitted to the chairman of the Medical Sessions Committee, 200 First St., S.W., Rochester, Minn.

Education for Family Living

The American Social Hygiene Association is sponsoring a two-day Conference on Education for Personal and Family Living on December 16 and 17 at the Hotel New Yorker in New York City. Through both formal addresses and work group sessions the theme of "a broader base for personal and family living," will be explored. The needs and resources for education in family living, interpretation of the respective responsibilities of home, school, church, and social and health agencies are among the matters to be explored.

The program for the conference is being planned on the basis of submitting proposals to a nationally representative body of consultants for suggestions. Among the features planned is the presence in each work group of one or two younng people and one or two parents.

A final program including names of speakers, and chairmen, consultants, and recorders for work groups will be available in November. This program can be obtained from American Social Hygiene Association, 1790 Broadway, New York 19, N. Y.

PERSONALS

George Nelson Aagaard, M.D., dean, Southwestern Medical School, University of Texas, since 1952, has been appointed dean, University of Washington School of Medicine, Seattle, succeeding Edward L. Turner, M.D., now secretary, Council on Medical Education and Hospitals, American Medical Association.

Harold E. Babbitt,* professor of sanitary engineering, University of Illinois, Urbana, has retired after 41 years of continuous service to the university.

STANHOPE BAYNE-JONES, M.D.,* research director of the Army Medical Department, Washington, D. C., heads the Committee on Scholarships, Grants, and Research Activities, Robert A. Taft Memorial Foundation.

JAMES BESSEY, former senior sanitarian Cowlitz-Wahkiakum Health District, has been promoted to advisory sanitarian, Washington State Health Department, Seattle.

DOROTHY L. BOVEE, formerly with the District of Columbia Red Cross Chapter, has been appointed food and nutrition consultant, American National Red Cross, Washington, D. C.

GEORGE BUGBEE,* president of the Health Information Foundation, New York City, and former executive director, American Hospital Association, at the 56th annual convention of the American Hospital Association in Chicago, September 13–16, was presented with the 1954 Award of Merit, the association's highest honor for his part "in the development of the American Hospital Association during the past decade and in the enormous growth of its contributions to the hospital field it was organized to serve."

RUSSELL L. CULP, chief, Water Supply Section, Division of Sanitation, Kansas State Board of Health, is on leave of absence as technical secretary, Kansas Water Resources Fact Finding Committee located on the campus of the University of Kansas, Lawrence.

ELIZABETH CURTIS, R.N.,* public health nurse, Los Angeles Veterans Administration Regional Office, has resigned to become school nurse for two new Junior High Schools in Anaheim, Calif.

H. JACKSON DAVIS, M.D., Dr.P.H.,* most recently general consultant to the Foreign Operations Administration for Latin America, has been appointed the first county health director of Bucks County, with headquarters in Doylestown, Pa.

PROFESSOR VINCENT DU VIGNEAUD, chairman of the Department of Biochemistry, Cornell University Medical College, received the 1954 John Scott Medal Award of the City of Philadelphia consisting of $1,000 and an engraved copper medal at the meeting of the American Chemical Society in New York in September in recognition of his leadership in the synthesis of oxytocin. Professor du Vigneaud received an APHA Lasker Award in 1948.

RICHARD FISHELL, M.D., is health commissioner of Sandusky-Erie County, Ohio.

ALLAN J. FLEMING, M.D., assistant director, has succeeded GEORGE H. GEHRMANN, M.D.,* as head of the Medical Division, Dupont Company, Wilmington, Del. Dr. Gerhmann will be associate director for a year until his retirement. C. A. D'ALONZO, M.D., has succeeded Dr. Fleming as assistant director.

LLOYD FLORIO, M.D.,* professor of preventive medicine and manager, Department of Health and Hospitals, Denver, Colo., is in Korea under the auspices of the American Korean Foundation to evaluate the foundation's public health programs.

ALICE FRAZER, M.S.P.H.,† public health educator, Office of Public Health Education, New York State Department of Health, has been assigned as public health education home safety consultant in the department's Division of Medical Services.

GEORGE GREGG, former senior sanitarian, Lewis County Health Department, has been promoted to advisory sanitarian, Washington State Department of Health, Seattle.

FRED GREINER, formerly on the Mount Vernon Daily Herald, has been appointed information supervisor, Washington State Health Department, Seattle.

BEULAH GUTENSTEIN,† chief, Editorial Division, Bureau of Public Health Education, New York City Health Department, is on leave to study for an M.P.H. degree at the School of Public Health, Columbia University.

CLARENCE L. GUYTON, M.D., M.P.H.,* former administrative assistant, Division of Administration, South Carolina State Board of Health, has been appointed assistant health officer, succeeding G. S. T. PEEPLES,* who has become state health officer.

PAUL D. HANEY,* sanitary engineer director, Robert A. Taft Sanitary Engineering Center, has resigned to become affiliated with Black and Veatch, Kansas City, Mo., consulting firm.

THEODORE SPAETH HAUSCHKA, Ph.D., since 1954 head of the Department of Experimental Zoology and senior member, Institute for Cancer Research and Lankenau Hospital Research Institute, Philadelphia, has been appointed director of the Department of Biology, the Roswell Park Memorial Institute, New York State Department of Health, Buffalo.

ARCHIE D. HESS,* senior scientist, Public Health Service, who has been in the Philippines as chief malariologist, Mutual Security Agency, is now chief of the Logan, Utah, Field Station Section of the Service.

HENRY VAN ZILE HYDE, M.D.,* chief, Division of International Health, U. S. Public Health Service, Washington, D. C., was elected

* Fellow.
† Member.

chairman of the Executive Board, World Health Organization, Geneva, at the May, 1954, meetings. He has served on the Executive Board since 1948 by appointment of the President.

WILLIAM T. INGRAM,* adjunct professor and project director, Research Division, New York University College of Engineering, has established also a consulting practice in sanitary engineering, 20 Point Crescent, Whitestone, N. Y.

H. C. JAMISON, D.D.S., is the new dental health officer of Mecklenburg County, N. C., at Charlotte.

ELLSWORTH JOHN, M.D.,† former health officer, Dixie-Lafayette-Suwannee Counties, Fla., is now area medical consultant for Washington, Mercer, Anderson, Garrard, and Jessamine Counties, Kentucky State Health Department.

ARTHUR FORD JONES, M.D., formerly in private practice, is now Garrett County (Md.) health officer. The county has been without a full-time health officer since 1951.

WALDEMAR KAEMPFFERT, science editor of the New York Times, has received the 1954 Kalinga Prize of UNESCO for his distinguished career in science writing.

FRANK L. KELLY, M.D.,* health director of Berkeley, Calif., for 31 years, retired in July, 1954, closing a career in public health which began in 1915.

THEODORE G. KLUMP, M.D., president of Winthrop-Stearns, has succeeded the late CHAUNCEY MCCORMICK as chairman of the Medical Task Force, President's Commission on Reorganization of the Federal Government.

A. RYRIE KOCH, former New York regional representative, U. S. Office of Vocational Rehabilitation, has become director, Rehabilitation Division, National Tuberculosis Association.

ALFRED S. LAZARUS, Ph.D.,* professor of public health and preventive medicine, University of Washington School of Medicine, Seattle, has resigned to accept a commission in the Public Health Service and is assigned to the Institute of Inter-American Affairs, Health, Welfare and Housing Field Party, Lima, Peru.

MRS. ROBERT F. LEYDEN, former editor of the society's Cancer News, has been made director of women's activities, American Cancer Society, New York City.

E. C. LINSCHEID, D.D.S., former director, Division of Oral Hygiene, North Dakota State Department of Health, Bismarck, has been appointed a member of the staff, North Dakota State Hospital for the Mentally Ill. He has been succeeded by JAMES H. PENCE,† D.D.S., former dean, Creighton University School of Dentistry, Omaha, Neb.

THOMAS F. MAHER, M.D.,† executive officer, Medical and Health Division, Masachusetts Civil Defense Agency, has resigned to become health commissioner of Westport, Conn.

HARRY A. MARSH, JR., former chemist in the Milk and Water Laboratory, has returned to the Kentucky State Department of Health as area sanitarian for Shelby, Jefferson, Bullitt, Spencer, and Oldham Counties, after receiving an M.P.H. from the University of Michigan School of Public Health.

JAMES H. MEANS, M.D.,† formerly chief of Medical Service, Massachusetts General Hospital and Jackson Professor of Medicine, Harvard Medical School, has been appointed acting medical director, Massachusetts Institute of Technology, Cambridge.

C. E. MORRIS,† former executive director, Wyoming Society for Crippled Children and Adults, Thermopolis, is now executive director, Sacramento, County (Calif.) Society for Crippled Children and Adults. He has been succeeded in the Wyoming society by MARGIE HURST,† former director of speech.

ANDREW C. OFFUTT, M.D.,† director, Bureau of Preventive Medicine, Indiana State Board of Health, Indianapolis, has been appointed state health commissioner, succeeding LEROY E. BURNEY, M.D.,* returned to the Public Health Service, Washington, D. C.

L. E. OREDELHEIDE,† director, Bureau of Public Health Engineering, Division of Health of Missouri, is on leave to serve as executive director of the newly created metropolitan St. Louis Sewer District.

RUTH AZNIV PARMELEE, M.D.,* recently retired as a Congressional Christian medical missionary after 40 years of service in the Near East, has received the Cross of Commander of the Royal Order of Beneficence for service to the people of Greece. Dr. Parmelee now lives in Auburndale, Mass.

W. PHILIP PHAIR, D.D.S., M.P.H.,* secretary, Council on Dental Health, American Dental Association, has resigned to enter private practice in Glenview, Ill.

ALTON S. POPE, M.D.,* deputy commissioner and director, Division of Tuberculosis and Sanatoria, Massachusetts Department of Public Health, has retired and will be teaching consultant, Harvard School of Public Health, Boston. A testimonial dinner was given for Dr. Pope at the Harvard Club of Boston on September 29.

FRANK B. QUEEN, M.D.,† professor of pathol-

* Fellow.
† Member.

ogy, University of Oregon School of Medicine, Portland, took office as president of the American Society of Clinical Pathologists at the society's meeting in Washington, D. C., in September.

JUDSON MILES REES, former director of public relations, United Hospital Fund of New York, has been appointed associate director, National Multiple Sclerosis Society.

ROBERT T. REID, business administrator, Indiana State Department of Health, has resigned to become general manager of Atkinson and Associates, engineering firm.

HOWARD A. RUSK, M.D.,† of New York City, has been chosen president-elect of the American Congress of Physical Medicine and Rehabilitation.

JONAS E. SALK, M.D.,* research professor of bacteriology, University of Pittsburgh School of Medicine, Pa., has been appointed head of preventive medicine as an initial step toward integration of the teaching programs in the schools of medicine, nursing, dentistry, and pharmacy at the university's Health Center, the appointment to take effect upon completion of the poliomyelitis vaccine tests in which Dr. Salk is now engaged.

JOSEPHINE A. SCELSI, R.N.,† supervisor, Pittsfield (Mass.) Visiting Nurse Association and Public Health Coordinator, Pittsfield General Hospital, has resigned to join the staff of the Philadelphia (Pa.) Health Department.

D. J. SCHLIESSMAN,† Technology Branch, Communicable Disease Center, Atlanta, has been transferred to the Cumberland Field Station, West Prestonsburg, Ky., as its chief.

DONALD P. SCHIESSWOHL, sanitary engineer, Bureau of Sanitary Engineering, Florida State Board of Health, has been appointed to the newly created position of executive assistant, Federation of Sewage and Industrial Wastes Associations. Champaign, Ill.

GEORGE SCHOCHET, formerly in private practice, has succeeded NEIL GORDON,† M.D., as Carroll County (Md.) health officer. Dr. Gordon is now Hartford (Conn.) county health officer.

MAXINE T. SHAFER,† formerly health educator, Buncombe County (N.C.) Health Department, is now health educator, Montana State Board of Health, Helena.

CHARLOTTE STEPHENSON, dental hygienist, has been appointed dental health consultant, Division of Dental Health, Kentucky State Department of Health, Louisville.

RICHARD M. STURTEVANT, for the past year agent and sanitarian, Amherst Board of Health, is now a sanitary engineer, Division of Sanitary Engineering, Massachusetts Department of Public Health, Boston.

DONALD R. TAVES, M.D., and RICHARD HANDSCHIN, M.D.,† have each been appointed public health resident, respectively, in the Clark-Skamania Health District and the Seattle-King County Health Department, Wash.

DR. J. W. TESCH, chief, Communicable Disease Section, Rotterdam, the Netherlands, is on a year's leave of absence to act as public health adviser to the Government of Ethiopia in collaboration with WHO.

ELLIS S. TISDALE,* chief, training division, PHS Communicable Disease Center, Atlanta, Ga., has been appointed director, Interstate Commission on the Potomac River Basin. Until he takes office in July, 1955, LAWRENCE M. FISHER, D.P.H.,* the member of the commission representing the federal government, has been named acting director.

EVERETT A. TRACY, D.D.S., chief, Division of Dental Health, Columbus (Ohio) Health Department, has resigned to enter private practice. He has been succeeded by ANDREW H. IMHOFF, D.D.S.

JUNE TRIPLETT,† supervisor, public health nursing service, Winona, Minn., is at the University of Michigan studying for the master's degree in public health. PATRICIA LEARY of the Winona staff is acting during her absence.

ART WILLIAMSON, director, Division of Municipal Engineering, North Dakota State Health Department, is in Indo China on a several weeks' mission of sanitary engineering to help in establishing refugee camps in Saigon.

JOHN L. WILSON, M.D.,† has been transferred from the U. S. Public Health Service Hospital in Manhattan Beach, Brooklyn, to the PHS Hospital, Staten Island, New York.

CHARLES G. ZUBROD, M.D., associate professor of medicine and director of research, Department of Medicine, St. Louis (Mo.) University, has been appointed clinical director, National Cancer Institute of the National Institutes of Health.

DEATHS

BYRON G. BARFIELD,* Sanitarian, Alachua County Health Dept., Gainesville, Fla., on September 20 at the age of 53 (Engineering Section).

JEAN BROADHURST, Ph.D.,† New York, N. Y., retired (Laboratory Section).

ALMA B. FRINGER,† for 20 years executive director, Winnebago County (Ill.) Tuberculosis Association on August 16 (Public Health Education Section).

* Fellow.
† Member.

HUGH B. MARTIN,† Health Officer, Englewood, N. J., Health Department (Health Officers Section).

CONFERENCES AND DATES

State and Regional Public Health Meeting:

Oklahoma Public Health Association. A. & M. College, Stillwater, Okla. November 8–10.

Meetings of Other Organizations Coming in November, December, 1954, and January, 1955:

American Academy for Cerebral Palsy. Williamsburg Inn, Williamsburg, Va. November 4–6.

American Congress on Obstetrics and Gynecology. Palmer House, Chicago, Ill. December 13–17.

American Dental Association. Miami, Fla. November 8–11.

American Medical Association. Clinical Meeting, Miami, Fla. November 30–December 3.

American Society of Tropical Medicine and Hygiene. Hotel Peabody, Memphis, Tenn. November 4–6.

Association of Military Surgeons of the U. S. Hotel Statler, Washington, D. C. November 29–30.

Association of State and Territorial Health Officers. Washington, D. C. December 6–10.

Community Welfare Council Leaders Conference. Community Chests and Councils of America. Cincinnati, Ohio. January 13–14.

Council of National Organizations of Adult Education Association. Chicago, Ill. November 5–6.

Council on Social Work Education. Chicago, Ill. January 26–29.

National Adult Education Association with the Council of National Organizations of Adult Education Association of the U. S. Morrison Hotel, Chicago, Ill. November 5–9.

National Conference on Education for Personal and Family Living. American Social Hygiene Association. New York, N. Y. December 16–17.

National Legal Aid Association. New Orleans, La. November 10–13.

National Society for Crippled Children and Adults. Statler Hotel, Chicago, Ill. November 3–5.

National Social Welfare Assembly, Inc. Hotel Roosevelt, New York, N. Y. December 6–7.

Public Relations Clinic. Community Chests and Councils of America. Washington, D. C. January 9–12.

United Community Defense Services. New York, N. Y. January 26.

* Fellow.
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Much evidence is available in medical reports to show that a lack of this vital nutritive element can result in impaired health. And in those cases of frank scurvy which still occur, ascorbic acid is the specific medication.

History. The history of vitamin C is fascinating. Scurvy was once the most prevalent disease in Europe. In the 18th Century the antiscorbutic value of fresh vegetables and citrus fruits was recognized.

Isolation. It was not until 1918-25 that almost pure ascorbic acid was concentrated from the lemon by Zilva and its important properties and molecular composition established. In 1927 he concluded that this so-called "reducing factor" and the antiscorbutic principle were closely related. In 1928, Szent-Györgyi, who started investigations in 1921, isolated a strong reducing compound from adrenal glands, oranges, cabbage, terming it "hexuronic acid."

Chemistry. The "reducing factor," "hexuronic acid," and vitamin C were all identified as the same in 1932 by various groups of workers. This was one year after C. G. King established the chemical identification of vitamin C.

Synthesis. In 1933 Reichstein and his colleagues in Switzerland successfully synthesized ascorbic acid. Almost simultaneously in England Haworth and associates accomplished the same. The Reichstein synthesis formed the basis for large scale commercial production by the world-famous firm of Hoffmann-La Roche.

Production. Following these discoveries came the establishment of manufacturing operations so that today daily production by the tons is the rule. The figures are really staggering. The amount produced weekly in the U. S. A. averages over 15 tons, equivalent to that contained in over 200 million oranges. It is remarkable that ascorbic acid can be produced synthetically and sold for only about $16. per kilogram. One kilo is sufficient to supply 92 people for one year with the minimum daily requirements set by the U. S. Food and Drug Administration.

Vitamin C made by the Roche process is identical chemically and in biological activity with Nature's own product. Because vitamins can be manufactured at a much lower cost than if they were extracted from natural sources they are widely used in dietary supplements.

Ascorbic acid is present in many foods. Nature supplies some with lavish amounts and stints on others. In fact, wide variations* have been found in the vitamin C content in varieties of the same fruit.

Deficiencies. Many surveys have shown widespread vitamin C deficiencies in the population. Physicians may call these subclinical, but they are deficiencies nevertheless.

Because of these situations—natural variation and widespread deficiencies—diet experts believe that it is desirable and in the public interest to standardize the vitamin C content of processed fruit and vegetable juices by the addition of enough pure crystalline ascorbic acid to make them consistently dependable sources of this necessary food element. Some of these juices are: tomato, grape, orange, grapefruit, pineapple.

Requirements. The U. S. Food & Drug Administration has set 30 milligrams as the adult minimum daily requirement of ascorbic acid. This daily intake is just about sufficient to prevent recognizable signs of vitamin C deficiencies although a subclinical or an unrecognized deficiency may exist. In view of this, the National Research Council has established 75 milligrams as the recommended daily male adult allowance and 70 mg. daily for female adults, which levels are supported by many controlled nutrition studies. However, the N. R. C. recommends 90 mg. daily for boys between 13 and 15, 100 mg. daily for boys between 16 and 20, and 150 mg. daily for lactating women.

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*The table shows minimum and maximum levels of ascorbic acid in commercially canned juices. All figures are in milligrams per 100 grams of juice. Data from U. S. Department of Agriculture.

	Min.	Max.
Apple juice	0.2	1.5
Grape juice	0.0	4.7
Grapefruit juice	10.0	43.0
Orange juice	9.7	70.6
Pineapple juice	5.4	16.0
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